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In Plain English

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Save Money

*Do More
& Spend Less
On Your PC*



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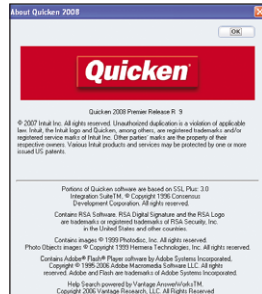
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Consumer Electronics

We tell you what you really need to know about various types of consumer electronics products. This month, we cover:

- External Hard Drives
- TV Stands
- D-SLRs



The Olympus E-410

Editor's Note

Even though PC prices consistently drop, they still manage to put a sizeable dent into many a budget. After all, your computer's price tag is just the first expense. Then, you find yourself eyeballing that new photo printer. Of course, it needs special, glossy, pre-perforated paper that costs more than everyday paper. And don't get me started about the price of printer ink.

That said, peripherals aren't the only, or even the biggest money drains. Your Internet service likely requires a monthly fee. If you paid for security software, you've probably already discovered that the software's malware updates don't last indefinitely. You'll likely need to pay for a malware update subscription every year.

In short, it's easy to explode the cost of your PC. Reducing your PC-related expenses is a different story altogether. And that's what we tackle this month. We'll give you plenty of ideas for making your computer do more (and spend less doing it). Also, you may have noticed last month that we have a new "Tech Diaries" columnist. I think you'll enjoy Linné Ourada's take on consumer electronics and, of course, computers.

Joshua B. Gulick

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Smart Computing
In Plain English



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Tired Of Your PC Tower? Here's An Alternative

Not all desktops are built to resemble your average box. The new IdeaCentre A600 all-in-one desktop from Lenovo (www.lenovo.com) packs all of its computing technology directly into a freestanding LCD, making the package both space-efficient and strikingly attractive.

Lenovo's A600 has a 21.5-inch frameless screen that's only 1 inch at its thinnest point, yet despite the lack of a traditional desktop tower, this PC doesn't sacrifice much in the power department. The A600 comes with a choice of Intel Core 2 Duo processors, optional ATI Radeon graphics card with DirectX 10 support, up to 4GB of DDR3 (double-data-rate 3) memory, and up to 1TB (terabyte) of hard drive space. Other features include Wi-Fi, a 6-in-1 media card reader, side-mounted USB and FireWire ports (additional USB ports are included on the rear panel), and VeriFace facial recognition technology that lets owners use their facial images for their logon passwords.

The architecture of all-in-one PCs such as the A600 makes these devices potentially a great fit in a home-entertainment setup, and the A600 doesn't skimp with entertainment ability. With a 16:9 aspect ratio and 1,920 x 1,080 full HD (high-definition) resolution, the A600 is designed to deliver excellent video quality, and the audio is similarly up to par with a bass subwoofer and

The Lenovo A600 IdeaCentre all-in-one PC bundles all of its technology into a single unit that not only looks attractive but also packs plenty of computing punch.



Dolby Home Theatre audio certification. An optional Blu-ray player is also available, as is a digital TV tuner. Also optional is Microsoft Vista Media Center for streamlined recording of TV programs and comprehensive control over media such as pictures, video, and music files.

The innovation doesn't stop with the A600's all-in-one design. This PC also features an optional remote control that does just about everything except wash the dishes. Not only does the remote serve as a media center and TV controller,

but it also can operate as an "air mouse" that moves the cursor on the screen, just like a grounded mouse. Further, the remote functions as a VoIP (Voice over Internet Protocol) handset that can make and receive calls over the Internet. Gamers will also appreciate the remote, which includes "motion drive" technology that controls on-screen objects in games according to the movement of the remote (think Nintendo Wii).

The A600 is slated for release this month, with prices starting at \$999. ■

STORAGE

OCZ Increases Its SSD Arsenal

OCZ Technology (www.ocztechnology.com) recently announced the OCZ Apex SATA (Serial Advanced Technology Attachment) II 2.5-inch SSD (solid-state drive) series, designed to serve as a midrange replacement for traditional hard drives in consumer systems.

The Apex series includes a new internal RAID 0 (redundant array of independent disks) architecture, an updated controller design, and 230MBps read and 160MBps write speeds. The drives can be useful for energy-efficient builds because their low power consumption can help to extend battery life in notebooks.



Further, the drives feature a durable alloy housing that helps to protect the internal architecture, though the lack of moving parts already makes SSDs more reliable than conventional hard drives. The MTBF (mean time before failure) of the drives, which provides an indication of their estimated lifetime, is an impressive 1.5 million hours.

The drives include a two-year warranty and come in three sizes: 60GB, 120GB, and 250GB. OCZ also sells another mainstream line of SSDs, called the Core series, as well as a value line, called the Solid series. ■

DISPLAYS

LG Trots Out New LCDs

Although the LCD market isn't faring particularly well for manufacturers, some companies continue to release new models in hopes of sparking more consumer interest. One of these companies is LG Electronics (us.lge.com), which has announced three new LCD monitor series.

The M237WD is a "full-HD" 1080p monitor designed for consumers who want a computer monitor that also serves as an HDTV (high-definition television). This 23-inch LCD monitor features a built-in ATSC (Advanced Television Systems Committee) tuner that lets consumers watch broadcast digital TV. This monitor includes a 16:9 aspect ratio, built-in A/V (audio/video) inputs for external devices such as a BD (Blu-ray Disc) player or a gaming console, a 5ms (millisecond) refresh rate, sleep timer, 4:3 auto-scaling, stereo audio speakers, and a universal infrared remote control. The M237WD—like other LG monitors—also includes the company's f-Engine picture-enhancing chip, which optimizes brightness and color independently.



With a picture-enhancing chip, built-in ATSC tuner, and audio/video inputs for Blu-ray players and other devices, the LG M237WD could be a nice complement to a home-entertainment environment.

With their 50,000:1 contrast ratio and 2ms response time, the LG 53 Series monitors are designed for consumers who deal with high-definition graphics- or video-editing or work with graphics-intensive applications. These LCDs are available in 19-, 20-, 22-, 23-, 24-, and 27-inch sizes and include Cinema Mode, which reduces on-screen contrast and brightness where full-motion video is not present, as well as an intelligent sensor that adjusts the picture based on the content displayed and room-lighting conditions.

Finally, the 22-inch L226WU-PF LCD monitor includes multilink technology that allows connection of up to six monitors through a USB connection. This monitor features a 5,000:1 contrast ratio and 2ms response time. Prices for LG's new LCDs were unavailable at press time. ■

PRINTERS & PERIPHERALS

Samsung Seeks Style Points With Printer

Who says a home printer has to be big, bulky, and unattractive? The Samsung ML-1630W (\$199.99; www.samsung.com) wireless laser printer is the smallest laser printer in the world, according to Samsung, which has managed to create a printer that blends style with performance.

The ML-1630W has a black, high-gloss finish that lets it blend into any interior, no matter how fancy. The printer doesn't even have traditional buttons, instead using touch-sensitive controls with blue LED (light-emitting diode) indicators. Pages are printed at up to 17ppm (pages per minute) in letter size, with up to 1,200 x 600 dpi (dots per inch) output. Coming out of sleep mode, the printer has a first-page-to-print time of 15 seconds.

An auto-sliding paper cassette holds 100 sheets and accommodates A4, A5, A6, letter, executive, and other paper sizes. The ML-1630W is also relatively quiet, with a noise level of less than 45 decibels when printing (a conversation between two people is around 50 decibels). The 14.1-pound printer is 4.78 x 13.07 x 17.76 inches (HxWxD) and includes USB 2.0 and 802.11b/g wireless capability. **I**



Sleek, shiny, and svelte, the Samsung ML-1630W breaks the home printer mold with sharp looks and wireless capability that allow it to be used almost anywhere in the home.

CPUs, CHIPS & CARDS

AMD Launches Mobile Platform

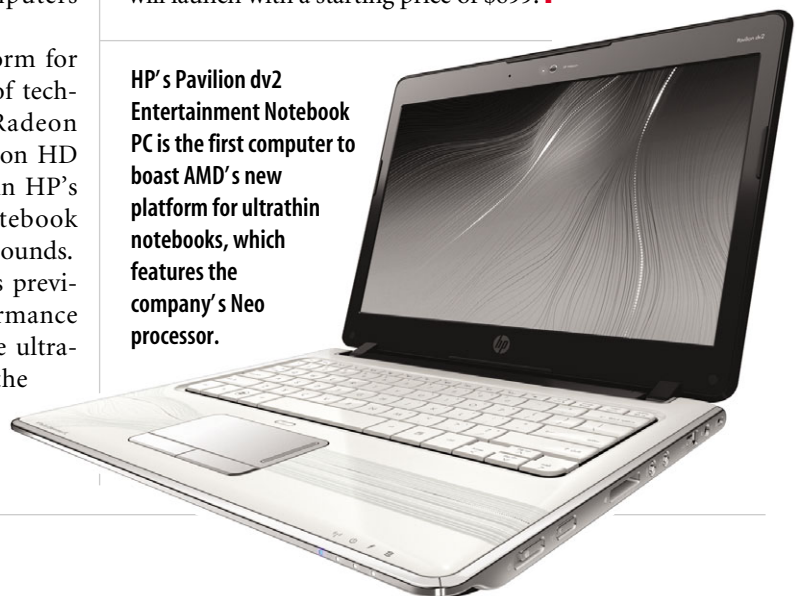
Last month, we reported on a new platform from Nvidia—called Ion—designed for netbooks. This month brings news of another platform similarly aimed at boosting the performance of thin-and-light computers without increasing the size.

Previously code-named Yukon, the AMD platform for ultrathin notebooks revolves around three pieces of technology: the AMD Athlon Neo processor, ATI Radeon X1250 integrated graphics, and ATI Mobility Radeon HD 3410 discrete graphics. The platform is debuting in HP's Pavilion dv2 Entertainment Notebook PC, a notebook that's less than an inch thick and weighs less than 4 pounds.

According to AMD (www.amd.com), consumers previously have had the choice of either a high-performance ultraportable at a high price or a low-performance ultraportable at a low price. But with this platform, the company says, consumers can now get better performance (including HD entertainment) at a still-affordable price.

Although only a single-core Neo processor exists now, AMD has plans to release a dual-core version of the processor later this year. The Pavilion dv2, which uses a 1.6GHz Neo, will launch with a starting price of \$699. **I**

HP's Pavilion dv2 Entertainment Notebook PC is the first computer to boast AMD's new platform for ultrathin notebooks, which features the company's Neo processor.

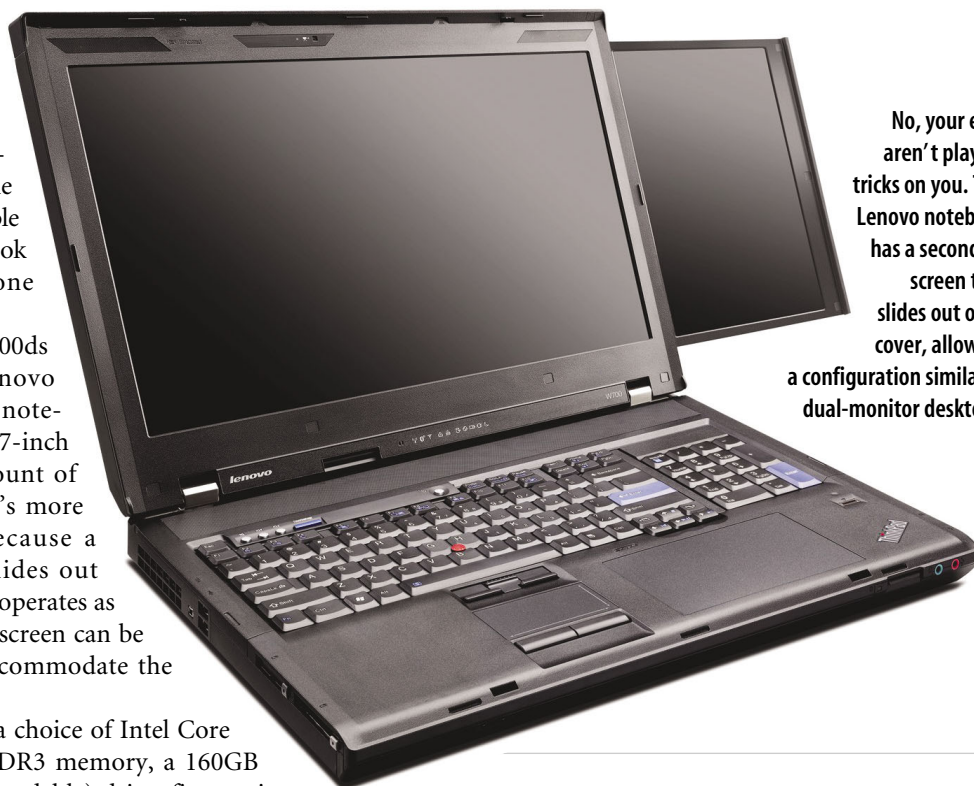


Dual Monitors Aren't Only For Desk Jockeys

As LCD monitors reached bargain-basement prices over recent years, an increasing number of desktop PC users have jumped on the dual-monitor bandwagon. But while dual monitors are certainly viable for many desktop users, notebook owners are still limited to one screen. Until now.

The Lenovo ThinkPad W700ds (starting at \$3,663; www.lenovo.com) looks like a standard notebook at first glance, with a 17-inch screen that offers a fair amount of display real estate. But there's more where that came from, because a second, 10.6-inch screen slides out from the notebook cover and operates as a second display. The second screen can be tilted up to 30 degrees to accommodate the user's viewing angle.

The notebook comes with a choice of Intel Core 2 Duo processors, 2GB of DDR3 memory, a 160GB hard drive, DVD-R (DVD-recordable) drive, fingerprint reader, integrated Wi-Fi, 9-cell Li-Ion battery, and Windows Vista Business. An optional built-in digitizer



No, your eyes aren't playing tricks on you. This Lenovo notebook has a secondary screen that slides out of its cover, allowing a configuration similar to dual-monitor desktops.

provides high-resolution, pressure-sensitive control of the primary screen, the primary and secondary screen, or a specific area of either screen. ■

PROBLEM-SOLVER: TROUBLESHOOTING THE NEWS

One of the USB ports on my portable device is dirty. Can it be cleaned?

Yes, it is possible to clean USB and other ports. Turn off the device and dab the edge of a clean, lint-free cloth in rubbing alcohol. Carefully insert the wet edge into the port and slowly rub until the port is clean. Allow the device to dry for about 20 minutes before turning it on.

My LCD monitor isn't scaling. How can I force it to scale?

If your LCD monitor isn't scaling, you might be stuck with a monitor or graphics card that simply doesn't

allow scaling. However, you might be able to work around potential scaling issues by trying to enable scaling using both the monitor's controls and your graphics card's (or integrated graphic's) controls. Also, certain Nvidia cards require a software tweak, which you can find by visiting tinyurl.com/csob3a online.

My PC speakers emit static when I rotate the volume control.

In your sound card's control panel (or alternately, in the Windows audio control panel), try muting the microphone and auxiliary volume controls.

If the problem persists, dust or corrosion might be causing the problem, which requires the controls to be cleaned with a detoxifying agent, such as Caig DeoxIT (www.caig.com).

My computer won't boot, and it is emitting beeps. How can I fix it?

If you're hearing one long beep or one beep that constantly repeats, your PC likely has a RAM problem. Make sure your RAM modules are properly seated in their slots. If they already are seated properly, try moving the modules into different slots. Try several combinations. ■

CONVERGENT TECH: PDAs & SMARTPHONES

T-Mobile Ramps Up Smartphone Offerings

Two smartphones recently announced by T-Mobile are designed to replace existing models that fared relatively well in the smartphone market. The T-Mobile Shadow replaces the original entry-level Shadow, while the RIM BlackBerry Curve 8900 offers enhancements over the Curve 8300.

The Shadow (www.t-mobile.com) is a sleeker version of the original and features both Wi-Fi and cellular (including EDGE [Enhanced Data for Global System for Mobile Evolution]) capabilities that let users switch easily between the technologies, depending on availability. The new model includes a 2MP (megapixel) camera, stereo Bluetooth wireless technology, video capture/playback, picture messaging, text messaging, a micro-SD (Secure Digital) memory slot, voice dialing, and a music player. The smartphone allows easy synchronization with Microsoft Outlook components, such as Contact, Calendar, and Tasks, and instant messaging can be performed using Yahoo!, MSN, and AOL services. The Shadow also has MegaTones wallpaper, HiFi ringers, and games.

The Curve 8900 (na.blackberry.com) is the thinnest and lightest full-keyboard BlackBerry smartphone to date. This new model features a 480- x 360-pixel, transmissive TFT (thin film



transistor) LCD that supports more than 65,000 colors and measures 2.44 inches diagonally. The Curve weighs 3.87 ounces and measures 4.29 x 2.36 x 0.53 inches (HxWxD). A 35-key backlit QWERTY keyboard joins a trackball on the front of the phone, along with

The BlackBerry Curve 8900 is thin, light, and brimming with features, including a 3.2-megapixel camera, wide-ranging media capabilities, and a robust 65,000-color LCD.

dedicated Send, End, Mute, and Lock keys. The keyboard includes password protection, keyboard lock, and sleep (standby) mode.

The 8900's 3.2MP camera includes auto-focus, image stabilization, a flash, and 2X digital zoom, while its video camera shoots in 480 x 352 pixels in normal mode and 176 x 144 pixels in MMS (Multimedia Messaging Service) mode. Voice input and output functions include an integrated speaker and microphone, hands-free headset capability, Bluetooth capability, and an integrated hands-free speakerphone. A media player supports several video and audio formats.

The Curve includes 802.11b/g Wi-Fi technology and includes several Wi-Fi Alliance Certifications, such as WPA/WPA2 (Wi-Fi protected Access). The device allows Wi-Fi access to BlackBerry Enterprise Server and BlackBerry Internet Server, as well as direct IP Web browsing over Wi-Fi. The Curve's 1400 mAHr removable/rechargeable cryptographic lithium cell battery has a talk time of 5.5 hours and a standby time of 356 hours. ■

DULY QUOTED

"It's the sort of thing which ought not really to be in the public domain."

—Peter Cozens, director of Victoria University of Wellington's Strategic Studies Department, comments on the 60 U.S. military files found on an MP3 player bought from a thrift shop in Oklahoma. The data included names and telephone numbers of American soldiers.

Source: AP

News From The Help Desk

Our Most Common Tech Calls

COMPILED BY GREGORY ANDERSON

Each month, we receive numerous technical support calls and email messages. Some computer problems are fairly common, and we find that many callers struggle to resolve the same issues. In this article, we cover some of the most common or timely tech support questions and provide our solution for each of them.

Q How do I get my computer to recognize my USB flash drive or my camera's memory card?

A New cards and/or new computers usually have the most trouble pairing up. After making sure your drive or card is in the right slot—this is usually more of an issue for memory cards than USB flash drives—the first thing to do is click Start and open Computer (My Computer in WindowsXP) and refresh by pressing F5. The next step is simply to remove the device, reboot the machine, and try again. Sometimes it's a simple matter of a disabled or corrupted port resolved by restarting. If that doesn't work, try the same port or slot with a different device. That should determine whether the device or the port is your problem. If the port isn't working, try a different one (USB is most likely to have multiple open spaces) or check Windows' Device Manager for warnings or driver updates. To find the Device Manager in Vista, enter **device manager** in the Start Search field; in WinXP, select Start, Control Panel, System (in Classic View), the Hardware tab, and the Device Manager button.

If the problem lies with your device, you'll have a little more work to do. For USB flash drives, try a different computer—ideally one where you successfully used the drive previously. If the other machine sees the drive and its files, check to make sure the device is using a format compatible with your system. If the other computer can see the drive but not the files, your files may be unreachable by conventional means. Seek out a data recovery service or, if you don't need to recover data from the drive, reformat it. If it's a memory card on the fritz, try putting it back into whichever camera, smartphone, or game system used it last. Make sure you're saving to a format your computer can read or try reformatting. (NOTE: This will clear the card

of data.) If nothing can see your drive or card, the hardware itself may have failed. In that case, the best path is usually to return the device or buy a new one.

Q My machine won't boot into Windows after a hardware update.

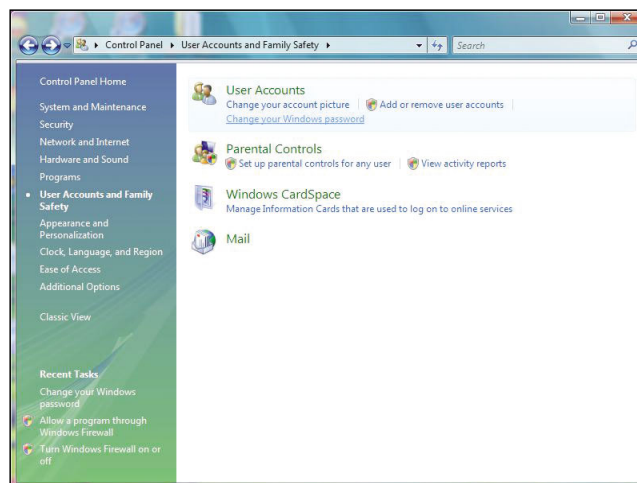
A A couple things can prevent a system from booting into Windows. The most serious is when the system BIOS (Basic Input/Output System) can't find the system hard drive. In this case, you may see a No Boot Device message at bootup or simply a blank screen. If your recent hardware update was external (connecting a portable drive or a new peripheral), disconnect the device and try rebooting again. If the update was internal, reopen the case and check all the connections between your motherboard, power supply, hard drive, expansion cards, and any other components. Next, boot up again and enter the BIOS—usually by holding the DELETE key at startup. Navigate to the section displaying drive information (each BIOS menu is slightly different) and see if your primary hard drive is visible. If not, the motherboard doesn't even see that the drive is present. This can be due to a hardware failure or to another drive “taking the place” of your primary drive. Try removing any newly added or secondary drives to see if your system drive returns. Ultimately, if the drive itself has failed, it will need to be replaced.

If the BIOS sees the drive but can't find Windows, you probably have a data problem rather than a hardware issue. In that case, try booting to your Windows disc and repairing the installation. As a last resort, you may need to re-install Windows entirely.

Q I lost or forgot my Vista password. How do I get into my machine?

A If you know the admin account password, or know who does, then log in as the admin and reset your user's password. (Click

Visit the User Accounts And Family Safety section of the Control Panel to change your Windows password.

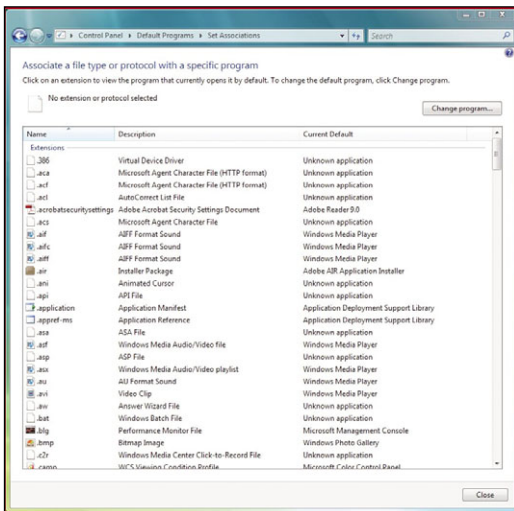


Change Your Windows Password in the User Accounts And Family Safety section of the Control Panel to get started.) Not knowing the admin account password makes things a little trickier. If you previously created a Vista Password Reset Disk, click Reset Password from the Vista login screen, insert the disk, and walk through the wizard to identify the disk's location and create a new password.

If all else fails, and if you have access to the Internet on another machine, use any of several password recovery tools (also called password "crackers"). Two popular examples are Ophcrack (free; ophcrack.sourceforge.net) and PC Login Now (free; www.pclloginnow.com), though other options are available. If you're unable to download and run such a tool, your only remaining option is to boot from your Windows installation disc and reinstall Vista.

Q My file doesn't open in the right program anymore. How do I control which programs open certain kinds of files?

A Windows associates a default application with each known file type. If that association changes without your knowledge, either accidentally or by the machinations of a devious program, you'll find files opening in new and strange ways. To choose a different application for a specific file, simply right-click the file and choose Open With from



Determine which applications open which files from the Control Panel.

the context menu. Click Choose Program and pick the program you want and check the box titled Always Use The Selected Program To Open This Kind Of File if you want to update the association for all files of that type.

The Windows Control Panel provides an interface to manage the entire list of file types and associated applications. In Vista, click Start and type **default programs** in the Start Search field, press ENTER, click Associate A File Type

Feature Package Topics

Each *Smart Computing* issue includes tips, reviews, and information about a variety of topics. However, each issue also has a featured group of articles about a selected topic. Below is a list of the Feature Packages from the previous year. As a *Smart Computing* subscriber, you have access to all of our archived articles at www.smartcomputing.com.

April 2008:	The Perfect Home Network
May 2008:	Protect Your PC & Your Privacy
June 2008:	Go Wireless
July 2008:	Clean Out Your PC
August 2008:	Troubleshoot Software
September 2008:	Do It Yourself: Notebook Repair
October 2008:	Boost Your PC's Performance
November 2008:	Reinstall Windows
December 2008:	Holiday Gift Guide
January 2009:	Did You Really Back Up?
February 2009:	Solve Windows Problems
March 2009:	Clean Out Old Software Clutter

Or Protocol With A Specific Program, and browse the list. Select the file type you'd like to change and click the Change Program button. Select the program you'd like to use to open the file and click OK. In WinXP, click Start and Control Panel, choose Folder Options (in Classic View), select the File Types tab, scroll to the file type in question, and click the Change button. Choose the program you'd like to use, ensure the Always Use Selected Program To Open This Kind Of File box is check marked, and click OK.

Q The sound won't work on my computer after an OS (operating system) update.

A Driver incompatibility is the most likely source of audio trouble following an OS update. If you also made hardware changes, start by checking all your connections, including, but not limited to, the sound card. Otherwise, start by checking volume and speaker settings and then visit your sound card vendor's Web site to look for driver updates. If you're using onboard audio (built into the motherboard), check the motherboard manufacturer's site. Some motherboards offer separate drivers for each onboard component; some combine drivers for all components into one update. Download and install the latest version of whatever the company offers. If the driver update doesn't work, try rolling back the OS update using Windows' System Restore utility. It may not be a permanent solution, but it will help you determine conclusively whether the update, and not some other change, created the problem. ■



*"The old saying, 'It paid for itself,'
well it really does.
The first time the "check engine" light
comes on and you DON'T have to take
the car to the dealer to find out
what the problem is! Excellent product."*

- Chuck P., Persia, IA

CarMD® Handheld Automotive Device & Software Kit | \$98.99 | www.carmd.com

Glovebox Mechanic

CarMD Helps Diagnose Hidden Engine Problems From Home Or On The Road

How many times have you seen the "Check Engine" light on your car's dashboard and worried what it meant? Should you pull over? Call a tow truck? Drive straight to the mechanic? Maybe it's just a loose gas cap. Thanks to the revolutionary CarMD handheld device, now virtually everyone who owns a vehicle can quickly and easily solve automotive repair mysteries—right from home.

How It Works

When your car's "Check Engine" light appears, plug the CarMD handheld device into your vehicle's Data Link Connector. (You can find the connector under the dashboard on all 1996 and newer vehicles.)

Within a few seconds, CarMD's built-in LEDs let you know whether

you can resume driving (Green = OK; yellow = possible problem; red = service required).

To learn more about your car's problem, connect CarMD to your PC using the included software and USB cable. CarMD customers gain free access to an extensive online database (www.carmd.com) that helps diagnose the cause and estimate repair costs to help you save time and money and keep your mechanic honest.

Features & Benefits

- CarMD works on 1996 and newer OBD2 cars, light trucks, SUVs, and minivans—foreign and domestic. For sale and use in the U.S. only.
- The CarMD handheld device helps buyers identify lemons at used car sales lots.

- Lifetime software updates keep your CarMD device up to speed on car trouble codes.
- CarMD includes toll-free access to ASE Certified Techs.
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Big Sound, Small Package

Expressionist BASS

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Well, basically, the bass is based in the base. Say what? That's right—I'm not trying to confuse. Altec Lansing's Expressionist BASS FX3022 speakers are what the company calls "the industry's first 2.2 desktop speaker system." Rather than a 2.1 system (two speakers, one subwoofer), the FX3022 has two speakers and two subwoofers, hence the 2.2. The 4-inch down-firing subs are built into the base of each speaker, eliminating the third bulky component from the usual 2.1 equation and effectively creating more space for the user.

I think I could probably write an entire article about the look of these speakers. They gained a lot of attention before I even turned them on. Within the first hour of taking them out of the box, four co-workers stopped by to comment. The speakers garnered a lot of descriptive adjectives (interesting, unique, futuristic, impressive). One even suggested that the speakers bear a slight resemblance to something that could dispense coffee. Needless to say, these twins are definitely a conversation starter, at the very least.

The Expressionist BASS, available in black or white, is a radical departure from the typical PC speaker, which is exactly what the company aimed for, according to Don Milks, senior manager for product management at Altec Lansing. The unique design was done intentionally to set them apart from the competitors and to take them out of the realm of the traditional office setting. But the design element is not just for looks; Milks says the cylindrical shape is also very important to the sound quality generated by these speakers. And, speaking of sound, I have an adjective of my own to describe that. Outstanding.

It took me less than five minutes to get sound flowing through the speakers. I set them up on either side of my monitor, about 3 feet apart. The spacing

between the right and left speakers is critical for the placement of any speaker setup, and with this particular set, I found it best to place them at ear-level and on a hard, flat surface, such as a desktop or countertop, so that the low frequencies from the subs radiated off the hard surface and reflected in omnidirectional patterns. I connected the included 3.5mm audio cable between the input on the right speaker and audio output on my PC, plugged the power adapter into an electrical outlet, and turned them on (a Power button and two volume controls are located on top of the right speaker).

The speakers handled voice quality with detail and clarity. I did notice that deep bass on full volume was a little weak and distorted at times. The sound quality for music was great, but games and movies are where the Expressionist BASS really shines. The speakers cover a dynamic sound spectrum with quality, clean highs and mids and deep, solid bass. The full, rich sound during action scenes blew me away, especially when considering two small, cone-shaped devices were producing all the sound.

To simply refer to the Expressionist BASS as a set of computer speakers doesn't really do them justice. My favorite part about the speakers is that they also include an auxiliary input so you can connect them to devices that have an audio output or headphone jack, such as MP3 players or CD/DVD players. This flexibility essentially makes them multimedia speakers. True, I mostly used them with my desktop PC while listening to iTunes and watching movies, but I also used them with my laptop to show off a new picture slideshow I recently created, I set them up in my living room with my home entertainment, and I used them with my iPod while I attempted to do aerobics. Anyone who does plan to use them for more than PC speakers would benefit from picking up a second 3.5mm audio cable; I found it a bit of a hassle to repeatedly disconnect and reconnect the cable to my PC after using them with other devices.

Overall, the Expressionist BASS speakers make a nice package. In terms of sound, they deliver; in terms of appearance, they complement any setting; and in terms of design, the space-saving construction is a big plus. Put this all together, and you have a pretty innovative concept. ■

Expressionist BASS FX3022
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www.alteclansing.com



An eSATA Flash Drive

Kanguru's e-Flash 16GB

MARTY SEMS

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First off, I'd like to thank longtime subscriber Joel S. from Mesa, Ariz., for his feedback on my recent Photo Story 3 for Windows XP article (February 2008, page 34). He says that you can get much sharper DVDs by first saving your movie file in a higher resolution and/or by using one of Windows video-editing guru PapaJohn's free custom profiles.

For example, at www.papajohn.org, click Photo Story 3 on the left and then Saving. Scroll down almost to the bottom, click the DVD Profile (NTSC) 720x480 link, and then save the PRX file download in your C:\PROGRAM FILES\PHOTO STORY 3 FOR WINDOWS\PROFILES\1033 folder. The next time you save a movie file before burning it to DVD (follow the article's instructions), choose the PapaJohn profile. I've tried this, and it works beautifully. Thanks, Joel!



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Kanguru's Double-Header

On one end, this flash drive (model KEFL-16G) has an ordinary USB 2.0 connector, which will work in virtually any recent computer. On the other side, however, is the e-Flash's secret weapon: eSATA (external Serial Advanced Technology Attachment). The eSATA connection removes USB's performance bottleneck and lets the flash memory hit its full speed. The drive comes preformatted with NTFS (NT file system), and it's compatible with Windows 2000/XP/Vista, Mac OS 9 or later, and Linux kernel 2.4 or later.

The eSATA connection makes attaching and detaching the e-Flash a little more difficult

than a typical USB flash drive, but Kanguru simplifies things with included accessories. For example, unless your computer's eSATA port has Power Over eSATA capability (most don't), you'll have to install the included expansion slot bracket, which has internal connectors for SATA power and data cables.

To use the e-Flash's eSATA connection on another PC that doesn't have Power Over eSATA, you can power the drive using a USB port. First, connect the eSATA side to the included eSATA extension cable and plug that into the computer. Next, plug the e-Flash's USB end into a USB port. If all goes as it should, the drive will shuttle data over the fast eSATA port while it draws its power from USB. On the downside, if you plan to use eSATA wherever you go, you'll need to bring along the extension cable, too.

There's one more complication. To mount (add) or remove the e-Flash over eSATA, you can use an included program called HotSwap!. Access the e-Flash as a USB drive and then copy the HotSwap!.EXE file to the hard drive before you double-click and install it. You should now see the HotSwap! icon in the system tray (it has a red arrow). Click Windows' Safely Remove Hardware icon, and then the e-Flash, to eject it as a USB drive. Next, turn it around and connect the e-Flash to an eSATA port, using USB power if necessary. Finally, to mount the e-Flash, right-click the HotSwap! icon and select Scan For Hardware Changes. To eject the e-Flash from the eSATA port, click the HotSwap! icon and choose Safely HotSwap Kanguru e-Flash.

If you do not want to use HotSwap!, you can mount the eSATA e-Flash using Windows Device Manager's (right-click My Computer, click Manage, click Device Manager) Scan For Hardware Changes option. To remove the drive, right-click the e-Flash under Disk Drives in the Device Manager and uninstall it or shut down your computer.

As the chart shows, eSATA is worth the extra effort. Write rates improve by about 25% over USB, and read rates more than double. You definitely won't get 78MBps (megabytes per second) over USB 2.0.

Kanguru is strengthening the e-Flash's cap at press time, so production models may look different. A 32GB version (shown) goes for \$119.95; both have a 3-year warranty. ■

Benchmark Results

HD Tach	eSATA	USB
Read rates, average/maximum (MBps)	72/78	33/34.5
Write rates, average/maximum (MBps)	25.4/27	20.8/22
Random access (ms)	0.4	0.7
Burst read rate (MBps)	80.8	35

Photo Freebies

Tools To Make The Most Of Your Photos

TARA SIMMONS

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TARA@SMARTCOMPUTING.COM

I'm always on the lookout for imaginative and gratis photo ideas, because, well, who doesn't love free stuff? It's especially appealing if it's fun and easy to use. Here are some of the free photo-related sources I've been making use of lately.

Age Photos Gracefully

A few months ago, I waxed nostalgic about pictures taken with Polaroid cameras and lamented the fact that Polaroid has stopped making its famous instant film. Die-hard instant film fans can still purchase it through several retailers, and those who want another way to give their photos that aged look can explore some Web offerings. First up, Poladroid (www.poladroid.net) is a free downloadable tool that gives new digital photos that just-devel-

oped look. Originally designed for Macs, a beta version is now available for Windows XP and Vista. The tool has been effective and easy to use in my experience, and the end result definitely has a Polaroid feel. There are only a few settings you can adjust, so there's not a lot you can do to determine what the photo morphs into. However, it's a fun and simple way to make perfectly good photos look old.

You can also add a Polaroid background to photos in the popular, free photo-editing tool Picasa 3 (picasa.google.com). You'll find this border option in the Collage section (select a photo or set of photos, click Create, click Picture Collage, and choose Picture Pile). The Collage section also offers a number of layouts that would work well for scrapbooking, and integration with Picasa Web Albums makes it easy to share your creations. If you're

looking for an easy way to quickly tweak photos, take a look around Picasa.

Another photo toolbox I've been using lately is Picnik (www.picnik.com). This free online tool offers basic editing and effects, including a '60s effect and a Polaroid frame. If you're not after the Polaroid look, give one of the other 32 effects a try. There's even a tool to whiten teeth. Create an account, and Picnik will save a copy of your photo.

Photo Projects

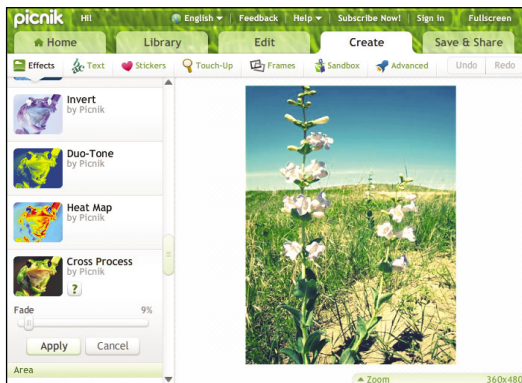
Beyond photo-editing fun, I've found a number of photo ideas and free-to-print projects on the Web. HP has a host of free project ideas and tools available at its Activity Center (tinyurl.com/bztnfk). Here, you'll find step-by-step guides for creating calendars, photo albums, cards that feature photos, and more. There isn't a huge library of design choices, but it's varied enough that you'll likely find something here to suit your tastes. Included printing directions are for HP printers, but you can also print the projects on a non-HP printer. You'll need Adobe Reader (free; get.adobe.com/reader) to complete these tasks.

Canon's Creative Park (tinyurl.com/47dr5t) is also a great source for printable goodies. You'll find everything from holiday photo cards to printable origami projects to professional photos, all available free. With more than 200 scrapbook pages alone, most photo project fans will find something useful here. Kodak also has a section of its site dedicated to photo projects (the Tips & Projects Center; tinyurl.com/bu2d5n) ranging from pop-up photo cards to a photo keepsake bag.

Free Tools

Adobe Photoshop certainly isn't free (\$699.99; www.adobe.com), but if you've already invested in this powerful photo-editing program, take advantage of the many Photoshop-related freebies. Many designers offer free Photoshop tools, and Adobe has a section of its Web site dedicated to the exchange of such tools (tinyurl.com/3dlldtj). (Read a full review of Adobe Photoshop CS4 on page 21.)

The Web is a great source for free tools and creative ideas for many hobbies, and with a plethora of photo-related tools available, you're sure to find some to meet your needs. ■



Online photo-editing tool
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**Wireless Rechargeable
Desktop Laser Mouse**
\$39.99

It's always interesting when companies known for certain products try something seemingly completely unrelated. In the case of Verbatim, longtime maker of storage products, the new venture includes keyboards and mice. Verbatim recently released four new boards, including the intriguing and gorgeous TuneBoard Speaker Keyboard, and several mice, including the Wireless Rechargeable Desktop Laser Mouse. Both models could find a home on anyone's desk, but both also seem ideally suited for a specific type of user—namely someone without desktop speakers and looking to do the environment a favor.

The TuneBoard's claim to fame is the two thin stereo speakers (5W max power each) it integrates into its glossy, jet-black frame. The board comes in Windows and Mac versions, but I was able to control Windows Media Player, iTunes, and Media Monkey content with my Windows model via the Play/Pause, Stop, Forward, and Back buttons. The board also offers a Mute; Volume; and oversized, round Bass Boost button. These media functions aside, the TuneBoard begs the question, "Why do I need a keyboard with built-in speakers?" The question becomes more pertinent if you already own desktop speakers. Verbatim says that beyond "giving users more control over sound playback," the TuneBoard "eliminates the clutter of speakers and wires on the desktop." True enough.

If not for a stealthy black grille covering the speakers, you might not ever notice them. Also inconspicuous is a tiny integrated microphone for VoIP (Voice over Internet Protocol) calls (Skype [www.skype.com] support is included), Web chats, or audio memos. Other extras include headphone and mic inputs at the keyboard's back edge and blue back-lighting, a nice option for dimly lit environments. An Illuminate button can turn the backlighting on and off. Typing-wise, the TuneBoard's keys felt smallish for my largish fingertips, though I didn't have much trouble

adapting. Though I appreciated the keys' extreme quietness and good action, I missed the extras other multimedia boards include, such as zoom ability and buttons to launch a Web browser, Favorites, email, etc. Further, outputting audio over the speakers took a few (albeit easy) re-configurations of audio properties.

Additionally, it's worth noting the board draws power for all this via one USB 2.0 connection.

Expectedly, audio quality was average, as the volume maxed out quickly when playing digital audio files via several media managers; audio CDs; DVD movies; and video clips from YouTube.com, Hulu.com, and other sites. Still, if you're without desktop speakers and top-end audio isn't a priority, the TuneBoard is definitely serviceable. Further, recordings, video chats, and VoIP I conducted using the integrated microphone were impressively clear and strong.

Compared to the TuneBoard, the Wireless Rechargeable Desktop Laser Mouse is a bit more pedestrian, but still a solid performer. Beyond an ability to cycle through 1,600 dpi (dots per inch), 1,200 dpi, and 800 dpi settings, the mouse's other defining trait is its use of two rechargeable NiMH (nickel-metal hydride) batteries. Dock the mouse in the provided USB 2.4GHz cradle/receiver with your PC powered up, and you're charging. Somewhat annoyingly, docking the mouse takes a bit too much aim and effort, though nothing too difficult. Beyond three side-located programmable buttons and a scroll wheel, the mouse's most noticeable physical characteristics are its size and right-handed-only design. The size was a great fit for my larger hand but will probably be less so for those with daintier graspers. Although fairly light considering its bulk, the mouse had excellent balance and flowed smoothly across my testing surfaces.

Performance-wise, my only real gripe with the gray-and-black mouse—one of 11 optical, laser, Bluetooth, wired, wireless, desktop, and notebook models in Verbatim's stable—is with the scroll wheel, which didn't flow as smoothly as the various Microsoft and Logitech mice I've been using. Still, this mouse's main objective is adding battery-recharging abilities to basic mouse features. To that end, the Wireless Rechargeable Desktop Laser Mouse succeeds. ■

Head-To-Head: Mice

A Mouse For Every House

In late 2008, the computer mouse turned 40 years old, and it would be an understatement to say that a lot has changed in the world of computers throughout those 40 years. As our computers have grown to be more sophisticated machines, so have computer mice. They have multiple buttons and functions and come with or without cords. Some mice have large, ergonomic bodies, while others tout a sleek, small appearance. If you've been living with the same mouse for a long time, you might be surprised to discover all the new features mice now have.

Anatomy Of A Mouse

One of the first things you might notice while shopping for a mouse is that some of them have lost their tails in the past few years. Wireless mice are growing in popularity because they can be used with your desktop computer and then easily packed up for use with laptops. Wireless mice come with a receiver that slips into the USB port and bridges the communication between your mouse and your computer. Having a wireless mouse is beneficial because you won't have a cord to get tangled up with the others, and you won't be tethered to a particular spot. If you are too far away, however, the connection could suffer. Wired mice are more reliable in a general sense, but you are limited to the amount of cord you are given.

Optical and laser technologies have replaced the rolling ball that used to be on the underbelly of older mice, communicating the moves it makes to your computer. Both optical and laser technology digitize that communication, but differ in the type of light used to follow the movements. Optical mice use an LED (light-emitting diode), and laser mice use a laser to track the movements of the mouse.

In this article, we'll show you several different kinds of mice and explain the features each have so you can better understand which kind of mouse is right for you.

Belkin Washable Mouse

The Belkin Washable Mouse is for the household with the motto, "accidents happen." If this sounds like your home, you'll be happy to find that the Washable Mouse has a water-resistant surface that can handle spills and be rinsed off in the sink. This is also handy when the cold or flu bug is circulating around your office and you want



Belkin Washable Mouse



Kensington Ci70 Wireless Mouse



Kensington SlimBlade Media Mouse

to crank the good hygiene up a notch.

This corded, desktop mouse has a scroll pad rather than a wheel, but it works virtually the same way for scrolling up and down Web pages and documents. Additionally, it's compact for portability or for small hands.

Kensington Ci70 Wireless Mouse

The Ci70 Wireless Mouse is a thin, flat mouse, designed to be portable and take up minimal desk space. According to Kensington, the Ci70 Wireless mouse is 35% smaller than the average desktop mouse. The Ci07 comes with a USB wireless receiver that you can store in the mouse's underbelly, but it also comes with a USB cord to connect your computer and the receiver so you can keep the receiver and the mouse in

close proximity. This is needed because the 27MHz wireless technology doesn't allow the receiver and the mouse to be far apart without sacrificing connectivity and communication.

To preserve the battery life, the Ci70 will sleep when your computer does. According to Kensington, this will also protect the optical sensor and increase its longevity. To use the mouse after it has been idle for a while, simply click the mouse and move it around.

Kensington SlimBlade Media Mouse

The SlimBlade Media Mouse works as a Desktop navigator, but it can also be a remote control for the media on

If you've been living with the same mouse for a long time, you might be surprised to discover all the new features mice now have.

BUYING TIPS

- If you spend a lot of time at your computer, consider a mouse with an ergonomic design (even if it's bigger than other mice) to reduce the likelihood of an injury, such as carpal tunnel syndrome.
- If you switch between a laptop and a desktop computer, consider a wireless mouse that is small enough to be easily transported with a laptop, but is big and comfortable enough to be used frequently with a desktop computer.

your computer. On one side, the SlimBlade Media Mouse has left- and right-click buttons, along with a scroll ball that allows for 360-degree scrolling. When you turn the mouse over, there is a control pad that lets you skip tracks, pause and play music or videos, and adjust volume.

The Logitech SlimBlade Media Mouse uses 2.4GHz wireless laser technology that provides you with a 30-foot range, which is helpful for controlling media across a room. The wireless receiver fits in the mouse next to the batteries for portability and to prevent the compact receiver from getting lost.

Logitech MX Air

The MX Air works both in the air and on surfaces to navigate your computer's



Logitech MX Air



Logitech LX3 Optical Mouse

Desktop, and it also features multimedia buttons for controlling music and movies. Logitech's Freespace motion sensing lets you maneuver the pointer around your Desktop while you are holding the mouse in the air. Like remote controls for your TV and stereo system, you can hold the MX Air in your hand while you pause and play media, skip tracks, and control the volume. The 2.4GHz technology allows up to 30 feet of

space between you and the wireless receiver. Additionally, the MX Air has a touch-sensitive scroll panel, rather than a scroll wheel. When you are not using the MX Air, you can set it in the rechargeable dock that comes with the mouse.

The MX Air is easy to use once you get used to it. Because it's not like

normal mice, it does take a bit of practice to become comfortable using it in the air, and you don't have as much control over the MX Air while it's airborne as you would with a normal desktop mouse. Once you have used it a few times, it will get much easier. Using the MX Air on a surface is just like using any other mouse.

Logitech LX3 Optical Mouse

The LX3 Optical mouse provides an affordable option for a corded mouse. The LX3 Optical mouse is designed with soft-touch sides, along with other features that make it comfortable to use. Additionally, the LX3 Optical mouse has tilt scrolling, and its scroll wheel can also zoom in on documents, such as photos.

Microsoft Arc Mouse

Switching between a desktop PC and a laptop PC is easy with the Arc Mouse. This wireless mouse has an arch design that folds for portability, but is comfortable enough for everyday use with a desktop computer. The wireless receiver clips to the bottom to

FEATURES

	Price	Company	Contact Information	URL	Notable Features
Washable Mouse	\$29.99	Belkin	(800) 223-5546	www.belkin.com	Water-resistant exterior; scroll pad
Ci70 Wireless Mouse	\$29.99	Kensington	(800) 235-6708	www.kensington.com	Sleep state; thin design
SlimBlade Media Mouse	\$59.99	Kensington	(800) 235-6708	www.kensington.com	Controls computer media; thin design
MX Air	\$149.99	Logitech	(800) 231-7717	www.logitech.com	Works in the air or on a surface; controls computer media
LX3 Optical Mouse	\$24.99	Logitech	(800) 231-7717	www.logitech.com	Comfortable design; side-to-side scrolling
Arc Mouse	\$59.95	Microsoft	(800) 426-9400	www.microsoft.com	Fold-up design; customizable buttons
Explorer Mouse	\$79.95	Microsoft	(800) 426-9400	www.microsoft.com	Works on almost any surface; ergonomic design
V550 Nano Cordless Laser Mouse For Notebooks	\$59.99	Logitech	(800) 231-7717	www.logitech.com	Clip-and-Go dock; small wireless receiver
Retractable Optical Stow-N-Go Laptop Mouse	\$19.99	Targus	(714) 765-5555	www.targus.com	Retractable cord; side-to-side scrolling



Microsoft Arc Mouse



Microsoft Explorer Mouse

Logitech V550 Nano Cordless
Mouse For NotebooksTargus Retractable Optical
Stow-N-Go Laptop Mouse

prevent it from getting lost, and has a range of up to 30 feet.

The Arc Mouse has four buttons (including the scroll wheel) that you can customize after downloading the (free) Intellipoint 6.3 software from Microsoft. You can program buttons, such as the button on the left side of the mouse, to perform functions, such as zoom, or minimize or maximize windows. If you use it on a Windows Vista computer, the default function is to prompt Flip 3D.

Microsoft Explorer Mouse

The Explorer Mouse is large and comfortable to use thanks to its ergonomically designed exterior. This wireless mouse touts the ability to work on almost any type of surface, such as wood, carpet, and marble, thanks to Microsoft's BlueTrack laser technology. The wireless receiver clips to

the underbelly of the mouse, and it has a range of 30 feet. By downloading Microsoft's Intellipoint 6.3 software, you can customize the Explorer Mouse's five buttons to perform almost any task. Additionally, the Explorer Mouse has a rechargeable battery.

Notebook Mice

Logitech V550 Nano Cordless Mouse For Notebooks

The V550 Nano Cordless Mouse For Notebooks is a good companion to your laptop because of its Clip-and-Go dock. The adhesive-backed Clip-and-Go dock sticks to your notebook and has a notch that lets your V550 Nano mouse clip onto your laptop so you won't have to carry the mouse or worry about it slipping out of your arms. It's small and lightweight for portability, and it has

four buttons, including one button that works with Vista's Flip 3D feature. The receiver, which is no bigger than a nickel, slips between the batteries for easy storage and loss prevention.

Targus Retractable Optical Stow-N-Go Laptop Mouse

The Stow-N-Go Laptop mouse has a retractable cord that clips to the underbelly of the mouse so your cord won't get tangled while it's in your bag. Its scroll wheel has tilt-wheel technology, and the software available on the Targus Web site (www.targus.com) lets you program the mouse's buttons. You can also change the dpi (dots per inch; this affects the sensitivity of the cursor on the screen) to 1,600, 1,200, or 800 dpi with the button that sits close to the scroll wheel. ■

BY TESSA WARNER BRENNEMAN

SPECIFICATIONS

	Tracking Technology	Connectivity	Battery Life	Scrolling	Systems Supported
Washable Mouse	Optical	Wired (USB)	N/A	Scroll pad; Non-tilt	2000 WinXP Vista Mac
Ci70 Wireless Mouse	Optical	Wireless	Up to six months	Non-tilt	WinXP Vista Mac
SlimBlade Media Mouse	Laser	Wireless	Up to six months	360-degree	WinXP Vista Mac
MX Air	Laser	Wireless	Five days per charge	Scroll pad; Non-tilt	WinXP Vista Mac
LX3 Optical Mouse	Optical	Wired (USB, PS/2)	N/A	Tilt with zoom capabilities	2000 WinXP Vista Mac
Arc Mouse	Laser	Wireless	Six months or more	Non-tilt	WinXP Vista Mac
Explorer Mouse	Laser	Wireless	Three weeks per charge	Tilt	WinXP Vista Mac
V550 Nano Cordless Mouse For Notebooks	Laser	Wireless	18 months	Tilt	WinXP Vista Mac
Retractable Optical Stow-N-Go Laptop Mouse	Optical	Wired (USB)	N/A	Tilt	2000 WinXP Vista Mac

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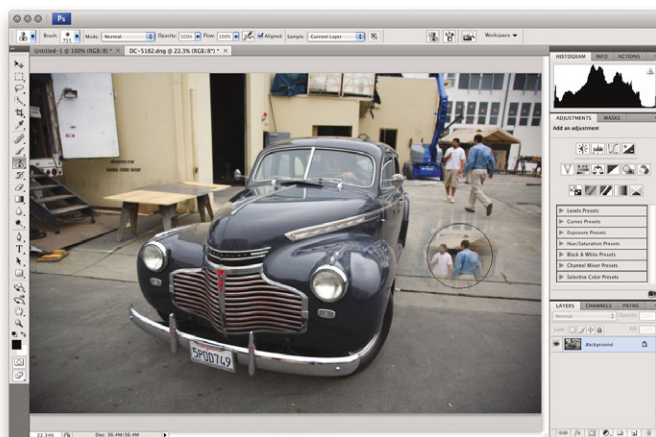


It's not often that we oo and aah over an updated program, but in the case of Adobe Photoshop CS4, we were deeply impressed. If you currently use an earlier version of Photoshop, or if you use Adobe Photoshop Elements (which has a similar interface and borrows several key features), you owe it to yourself to check out this program. Adobe's free trial and substantial student discount only sweeten the deal (the Extended edition is available to students and educators for \$299). With that said, if you are not familiar with high-end photo editors or the Adobe family and have no need for advanced image editing, this product may offer far more power—and a much steeper learning curve—than you want or expect.

New Technologies

Some of Photoshop's enhancements, such as those applied to the Dodge, Burn, and Healing tools, will appeal mainly to graphics or photography professionals, so we won't discuss them here. (If you're curious, Adobe's site has PDFs with the low-down.) However, any proficient shooter can appreciate the new tools and slider bars in its Camera Raw plug-in (which supports direct editing of images shot in the uncompressed RAW format).

Furthermore, Adobe has overhauled several of the tools common to most photo editors, including saturation, brushes, and zoom. Brush sizes can now be altered on the fly—a real benefit for any Photoshop user



Key Features: Content-Aware Scaling lets users compress the backgrounds of images without changing the proportions of foreground elements. It also offers enhanced editing in RAW format and a revamped, better-organized interface.

who has ever wasted his time trying to find just the right brush. Zoom is even cooler—Photoshop can perform smooth, interactive panning and zooming. The Clone Stamp (which makes exact copies of pixels you select and places them where you click) now shows a pixel preview rather than just the brush shape, and you can apply adjustments to multiple layers of an image much more easily than before.

On The Bridge

Bridge, the media browser that comes with Photoshop and other CS4 products, lacks the advanced nature of other functions, but it is useful and well integrated. You can see thumbnails, not only of digital photographs, but also of video and animation files, and Bridge lets you view thumbnails that are larger than Windows' native file browser. Features common to these types of utilities, such as metatags, keywords, and ratings, are all present.

Inside The Interface

With Photoshop CS4, Adobe overhauled the interface, incorporating document tabbing, a control bar, pop-up menus, and other improvements that help organize the product's many palettes and tools. That sleek new interface is now largely consistent across the CS4 line, as well. Photoshop also now incorporates standard Windows keyboard shortcuts (an improvement that has been a long time coming). Users familiar with older versions can revert to the old-style interface and shortcuts if they prefer.

Saving The Best For Last

The most amazing new feature of Photoshop CS4 is Content-Aware Scaling. Have you ever taken a shot where the subjects in your photo were separated by too much background? With Content-Aware Scaling, Photoshop recognizes the important foreground elements in your image and keeps those intact as it smoothly scales the rest of the shot to eliminate excess background. This feature is hard to explain on paper, but if you don't gasp when you see it, you're not easily impressed.

Overall, Photoshop is a serious workhorse that has learned some great new tricks. System recommendations (including the need for an OpenGL-compatible graphics card for some features) are fairly stout. Ensure your PC meets them and you can reap the benefits of this powerful program. ■

BY JENNIFER FARWELL

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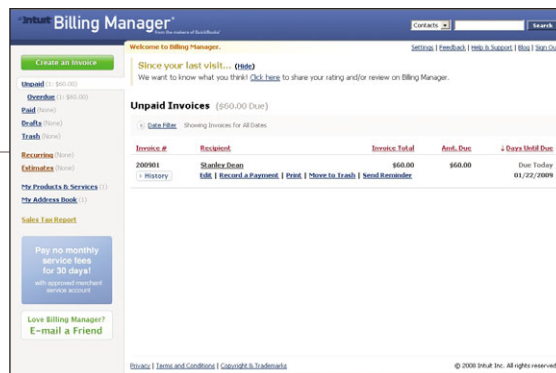
From the makers of QuickBooks, Quicken, and TurboTax comes Billing Manager, a basic but functional Web-based invoicing system. Users need only create a password, select one of the provided templates, and enter business, client, and billing data to create invoices.

Once the account owner creates an invoice, Billing Manager can send an invoice link to the customer via an email (with boilerplate or custom text) or display the invoice for printing. Billing Manager keeps tabs on provided payment data and can generate reminders for unpaid invoices. Those who want to create estimates or set up recurring invoicing can opt for an enhanced version and pay a \$9.95 monthly fee. Users who want to accept credit card or electronic

Key Features: It has an easy-to-use, Web-based invoice generator/reminder and payment tracker system.

check payments can purchase the QuickBooks Merchant Services add-on for \$14.95 per month plus a small fee for credit card payments. (Both services offer a 30-day free trial.)

It is disappointing that Billing Manager cannot interact with Intuit's other financial products, banks, or even Excel and other spreadsheet formats. However, a company representative says the product targets those with limited billing needs. We



see this benefiting solo business owners with an urgent need to generate invoices or accept payments while they are away from their office computers. ■

BY JENNIFER FARWELL

Tweak Your PC Fix-It Utilities 9 Professional

\$49.95 (3-PC license) | Avanquest
(800) 395-6682 | www.avanquest.com



This leading PC optimization, repair, and recovery utility previously offered registry checking and cleaning, antivirus and antispyware protection, disk checking, automated drive defragmentation, and more. However, with the release of version 9, the product has reached a pinnacle of value that is hard to beat.

The developer incorporated a new Internet speed optimizer that tweaks both Internet Explorer and Firefox. Also included are new Windows and memory optimizers that address such common trouble spots as Microsoft Office, the print queue, and more. Enhancements to the temporary file cleaner, antivirus and antispyware engines, boot-time optimizer,



Key Features: It performs more than 100 tests to tweak your PC into top shape and includes antivirus and other security features.

and file shredder feature round out the offering.

As with previous versions, installation is intuitive and easy, with Fix-It backing up critical system files before

getting down to business (install time will vary based on your system). Users can choose complete or custom installation, as well as whether to turn on various features. However, make sure you are connected to the Internet during setup. Otherwise, Fix-It cannot run the auto-update feature, and the program installation may fail, requiring you to uninstall and reinstall the program.

After installation, open the product to establish baseline settings. The interface is streamlined and well-organized, making this a simple task. Overall, we've always been fans of Fix-It Utilities, and version 9 only increases our confidence in its value for PC users. ■

BY JENNIFER FARWELL

Dig Up Your Roots Family Tree Maker 2009 Platinum

\$99.99 | Encore
(310) 768-1800 | www.encoreusa.com



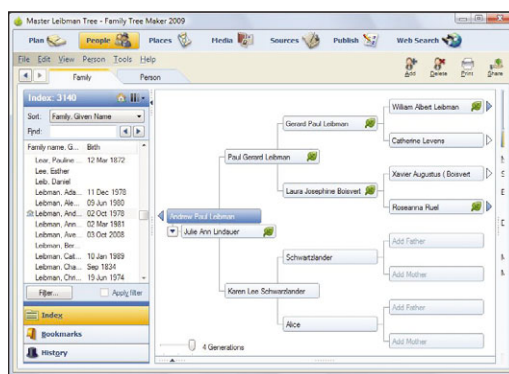
Until fairly recently, the process of creating a family tree was a largely solitary one that involved long hours sifting through personal documents, in a library looking at old newspapers and census records, and poring over books and photos. The Internet has brought much of the research aspect into your home, but it's Family Tree Maker 2009's tight integration with Ancestry.com that really makes exploring your past a communal experience.

Plant A Seed

Encore's FTM 2009 has an intuitive interface that lets you build your family tree from known information quickly and easily. Get started by entering your name, your parents' names, and other specifics. From there you're taken to the Family tab with a full view of your bracketed (and rather barren) tree. You can add spouses by clicking the appropriate boxes and children by clicking the down arrow associated with the mother and father. Hover your mouse pointer over any name to see birth, marriage, death, and other details and edit those details using the column to the right of the page.

Dig Deeper

As you provide more specific details, FTM begins flagging your entries with records and document matches, or Ancestry Hints, culled from Ancestry.com's massive database. You'll need a subscription to the service to view the



Key Features: The software handles known data ably, but the Ancestry Hints automatically clue you in to previously unknown documents and records that really make FTM 2009 shine.

records, but thankfully, FTM 2009 Premium comes with a generous 6-month U.S. Membership (\$19.95/month, \$155.40/year). As we went to press, Ancestry.com offered a 14-day free trial to new users. This subscription lets you dig in to Ancestry's U.S. catalog of census, birth, marriage, death, immigration, and military records. The World Deluxe Membership (\$29.95/month, \$299.40/year) lets you flesh out your lineage using records from all over the world.

Browsing the Ancestry Hints helped us locate a digital scan of the original 1900 census document upon which a distant relative listed that he emigrated from Germany in 1853, married a woman less than half his age, and set up shop in New York as a woodcarver. Unique discoveries like this and more are yours with FTM 2009, and if you're a seasoned genealogy gumshoe, the software lets

you import several family tree-making software file types and any GEDCOM (Genealogical Data Communication) files.

GEDCOM files can also be merged with your existing trees. We initially encountered an error merging a very large GEDCOM to our smaller tree. Toward the end of the merging process, the software crashed and the operation failed. Two weeks after contacting them, Family Tree Maker's Support got back to us with a solution that involved deleting the FTM 2009 user configuration file. Once completed, we were able to merge the large GEDCOM file with our smaller tree without a problem.

What's Old Is News To You

Ancestry.com is always adding new content to the site, such as Civil War records and more newspaper articles, and with a current membership you get access to it all as soon as it becomes available. Using FTM 2009 alongside the Web site's nearly identical tree-making interface takes a little getting used to, as changes made in one do not transfer automatically to the other. To avoid confusion, we recommend making all your major additions and deletions from the software and its built-in browser interface. Despite a few minor quirks, the software and Ancestry.com make family tree-making simple and fun. ■

BY ANDREW LEIBMAN

Become A Do-It-Yourself Director

Pinnacle Studio Ultimate 12

\$129.99 | Pinnacle
(866) 446-0833 | www.pinnaclesys.com



Francis Ford Coppola said of editing, “It’s the combination of . . . extraordinary images of people during emotional moments . . . put together in a kind of alchemy.” Pinnacle’s latest alchemical creation, Studio Ultimate 12, demystifies making movies and lets the novice and expert craft something each can be proud of. We were rather impressed by the previous version of Studio Ultimate, and this latest installment builds on the successes of the platform.

Studio Ultimate 12’s bundled-in tools include the Boris Graffiti plug-in for creating unique title animations; Magic Bullet Looks for adding a dated, sinister, washed out, or other Looks to your video; and ProDAD VitaScene, which lets you add light rays, artistic film styles, and more.

Key Features: Studio Ultimate 12 features new Web publishing options and templates for making professional-looking movies with ease.

The retail version of Pinnacle Studio Ultimate 12 also includes a green sheet

for creating Chroma Key effects such as superimposing a new background.

Unless you’re familiar with Pinnacle Studio, you may have a hard time determining an icon’s purpose at first glance. Thankfully, Pinnacle offers tutorials on its Web site to help you get around. Smart Movie cuts out the hassle for beginners and produces



great results, while other features, such as customizable markers, make Studio Ultimate 12 great for advanced users. A healthy online community and solid support site are also there to help you take advantage of some of the more advanced features. ■■

BY ANDREW LEIBMAN

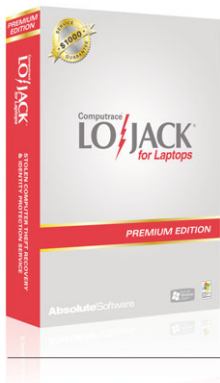
Security When You Need It Most

Computrace LoJack For Laptops Premium Edition

\$59.99 per year | Absolute Software
(866) 493-4182 | www.lojackforlaptops.com



It’s a sad fact that losing your laptop can be a financial burden, but if the device falls into the wrong hands, your personal data can be used to



Key Features: LoJack For Laptops Premium Edition can locate your lost or stolen laptop and make sure you get it back or get compensated for your loss.

compromise your identity, turning what was just an inconvenience into a devastating ordeal. Computrace LoJack For Laptops Premium Edition takes the uncertainty out of a lost laptop and makes sure you get your property back or that any personal data on the laptop is deleted. If either of those two conditions can’t be met, Absolute Software will fork over a cool \$1,000. How’s that for peace of mind?

To get protection, just install the software, enter the subscription key, and register your details. If your laptop gets lost or is stolen, immediately file a

police report and contact Absolute Software’s Recovery Team. From there, the Recovery Team works closely with the local authorities to recover it. Once reported stolen, LoJack for Laptops begins phoning home every 15 minutes when connected to the Internet, and because it works silently in the background, the thief will never know it’s there. The software can even survive a complete reformat of the hard drive. If you want to keep your laptop on a short leash, get LoJack. ■■

BY ANDREW LEIBMAN



COMPILED BY JOSEPH MORAN

Microsoft News

Microsoft Opens "Store Of The Future"

Microsoft's Redmond, Wash., headquarters is now home to a 20,000 square-foot store environment called the Retail Experience Center.

The store, which is not open to the public, is a showcase for Microsoft products and technologies designed to improve a consumer's shopping experience and help retailers promote and sell their wares more efficiently.

The Retail Experience Center features technologies like interactive kiosks and cart-mounted displays and will serve as a test facility for Microsoft customers and partners.



Microsoft Releases Pair Of iPhone Apps

It may be a competitor's product, but that isn't stopping Microsoft from developing software for Apple's iPhone. The company's first two iPhone applications, Seadragon Mobile and Tag Reader, are available for free download via the Apple App Store.

Seadragon Mobile is a photography program that provides smooth navigation and zooming through large collections of high-resolution images. Tag Reader enables access to additional information about a product by taking snapshots of special multicolor barcodes on items such as print advertisements, billboards, or product packaging.

Verizon Wireless Selects Microsoft For Mobile Search

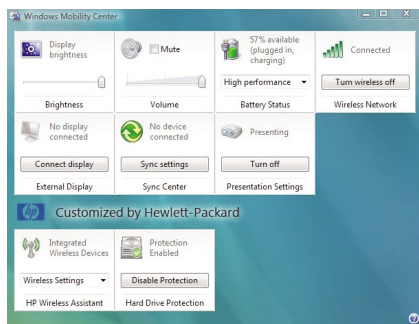
Microsoft has signed a five-year deal with Verizon Wireless to become the company's official search provider. Under the agreement, which goes into effect in the first half of 2009, Microsoft will deliver search results and advertising on Verizon Wireless mobile phones, and customers will be able to access Microsoft Live Search via their phone's home screen, a downloaded application, or Verizon's Mobile Web Service.

Windows Tips

Windows Mobility Center Offers One-Stop Configuration For Vista

When running Vista on a notebook, there's no need to jump around the operating system to configure different mobile-related settings. The Windows Mobility Center provides a convenient way to view and adjust these kinds of settings (such as battery life settings) from one place.

You can get to the Windows Mobility Center by searching for it from the Start menu. The specific options available vary depending on the system manufacturer, version of Vista, and how a notebook is equipped, but on most notebooks the Windows Mobility Center will let you change the display brightness, speaker volume, and power management plan plus configure an external display and turn Wi-Fi and presentation settings on and off. Clicking the icon for a particular item will take you to its Control Panel configuration area where you can adjust additional settings.



Find Your Hidden Path In Vista

When you right-click a file's icon in Vista, you get a familiar context menu of options such as Copy, Delete, Rename, Print, etc. But when you hold down the SHIFT key while right-clicking an item, you'll see an additional menu option called Copy As Path—choose this option, and the complete path to the file (for example C:\USERS\JOSEPH\PICTURES\photo.jpg) is automatically copied onto the clipboard.

The Copy As Path feature can come in particularly handy when you need to upload a file to a Web site or attach one to an email, especially when the file is tucked away deep within a series of folders. Once a file's path is in the clipboard, you can select a file by pasting it directly into a site or email software instead of having to browse to its location.

Add More Monitors With Software In WinXP & Vista

Having a system with a big high-resolution monitor is great for productivity because all that space lets you stay organized with lots of apps open and visible at the same time. But if you can't enjoy this type of setup due to budget or graphics card limitations, a free Microsoft utility called Desktops can give you the next best thing—virtual Desktops.

Available for download from the Microsoft TechNet Windows Sysinternals Web site (tinyurl.com/5fywm3), Desktops lets you expand your screen real estate and spread your apps across up to four virtual Desktops. After running the utility, you can easily switch between virtual Desktops with a hotkey combination—the default is ALT plus the 1 through 4 keys, but you can choose others—or by clicking the Desktops System Tray icon to display thumbnail versions of your Desktops.

Windows News

Microsoft Extends WinXP Delivery Deadline By Four Months

PC builders and resellers wanting to sell Windows XP-based systems have been given an extra four months to obtain licenses for Microsoft's now-discontinued operating system.

While eligible system builders (mainly small, local vendors—not the major manufacturers) had previously faced a Jan. 31 deadline to obtain WinXP licenses, they now have until May 30 to take delivery of any licenses ordered before the Jan. 31 cutoff date.

Microsoft Launches Vista Community Help Forum

Microsoft has launched a beta of Windows Vista Answers, an online community support forum where Vista users can get operating system information and assistance with technical problems.

When visiting the Windows Vista Answers Web site (tinyurl.com/6544tf), you can search and browse a database of common Vista questions and answers, or (if you have a Live ID) post your own questions that can be answered by other forum users and a team of Microsoft support personnel.

Responses to questions can be received by email or via RSS feed in lieu of going to the site.

Users Test Windows 7

The next version of Windows, Windows 7, appears to be on the fast track to release. A public beta was made available earlier this year, and some analysts believe this and other actions from Microsoft point to a release as soon as late this year.

Public interest in the new OS (operating system) seems to be high. Following the announcement of the availability of the public beta in January, Microsoft's Windows 7 Web site (tinyurl.com/3qy28n) was so deluged with visitors, the company temporarily lifted an initial 2.5 million limit on downloads.

Those that downloaded the Windows 7 beta have until Aug. 1 to put the OS through its paces; that's the day the beta will expire.



Windows XP

Power Up With PowerToys

Just because Windows XP shipped in October 2001 doesn't mean that Microsoft is done with it. Crucial new features and security updates, of course, are still rolled out and distributed individually and as part of cumulative service packs. Not every new addition or feature, however, arrives via Windows Update. Windows XP PowerToys is a collection of additional software designed to enhance WinXP.

PowerToys is a collection of 14 small applications that let you do a number of things such as organize your photos or tweak your system. While PowerToys are free and designed by Microsoft to work with WinXP, Microsoft does not offer any support for PowerToys.

What's Available

Some PowerToys cater to photographers, while others appeal more to power users who love to endlessly tweak their systems. Still other PowerToys provide miscellaneous options such as an improved calculator. You can view a current list of PowerToys at tinyurl.com/553fw6.

For photographers. Whether you just enjoy snapping pictures on vacation or earn a living behind the lens, a large number of PowerToys may appeal to you. Consistent color, for instance, is important for professional photographers. WinXP provides consistent-looking color between applications through ICM (Image Color Management) 2.0, but ICM doesn't provide consistent color between displays. Vivid colors on an LCD may appear washed out when viewed through a projector. The Color Control Panel Applet sits in the Control Panel and lets users with administrator privileges create multiple ICM color profiles for different displays.

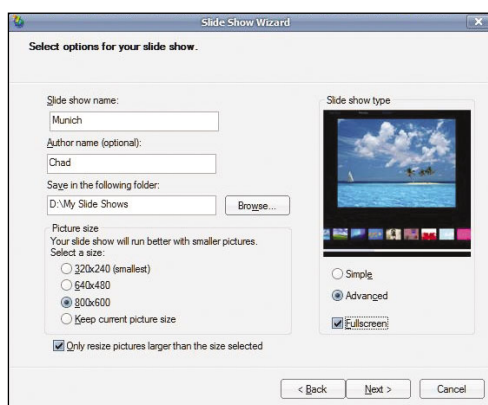
Another PowerToy for professional photographers is the RAW Image Thumbnail And Viewer. When most of us take a snapshot, the camera processes the data received from the camera's sensor, making several irreversible decisions automatically. In order to control this process themselves, professional photographers often use RAW file format to save data directly from the camera's sensor. RAW Image Thumbnail And Viewer, as the name suggests, adds RAW file support to WinXP so you can work with RAW files in WinXP as easily as you work with JPEG (Joint Photographic Experts Group) files.

Not every photography-oriented PowerToy targets professionals, however. HTML Slide Show Wizard allows anyone to create HTML slideshows through a simple wizard interface. Once created, users can easily upload the HTML code to a Web site. Image Resizer is another helpful PowerToy that lets you quickly resize images by right-clicking them. Finally, CD Slide Show Generator allows you to turn any picture CD into a slideshow.

System tweaks and additions. Other PowerToys make it easier to modify your system, provide an added feature, or make a single, small tweak. Perhaps one of the most well-known PowerToys is Tweak UI, which lets you alter a large number of system settings, many of which you can only otherwise alter by editing your Windows Registry (a dangerous proposition because a mistake could render Windows unbootable).

Another PowerToy, ClearType Tuner, lets you tweak a specific feature of Windows. ClearType is a technology developed by Microsoft to make text easier to read on LCDs. Normally, ClearType has just two settings, on or off. ClearType Tuner, however, allows you to fine-tune ClearType. SyncToy 2.0, on the other hand, adds a new Windows feature: the ability to keep data in two different folders synchronized.

Other PowerToys improve aesthetics. Alt-Tab Replacement, for instance, changes the standard pop-up window that appears when you use ALT-TAB to switch among applications. With Alt-Tab Replacement installed, you see a thumbnail view of application windows as you cycle through open applications.



This simple wizard is all you need to create a photo slideshow you can upload to the Web.

Fans of the Command window may appreciate Open Command Window Here, which allows you to open the Command window in any directory by right-clicking the directory in Windows Explorer. Meanwhile, Power Calculator adds a feature-packed new calculator to Windows that lets you graph and evaluate functions and convert between multiple measurements. Finally, Virtual Desktop Manager lets you work with up to four virtual Desktops in Windows. This way, iTunes and other entertainment apps can run on one virtual Desktop where they won't interfere with Word, Firefox, and other work tools running in another virtual Desktop.

Accessibility and miscellaneous. A couple of other applications have more specific uses. Screen magnifiers make text easier to read for those with poor eyesight. Taskbar Magnifier places a screen magnifier right in the Windows Taskbar. Meanwhile, Webcam Timershot is a handy security tool for those with Web cams. The software lets you take shots from your Web cam at preset intervals and save the images to a directory.

Download & Install

Each PowerToy is its own application, and you must download and install each one separately. From the PowerToys Web page (tinyurl.com/553fw6), click the relevant link on the right side of the page to download a specific PowerToy. The download process may differ from one PowerToy to another.

Note that some PowerToys have alternative versions. A special version of Tweak UI is available for Itanium processors, and SyncToy 2.0 is available in a 64-bit version. Make sure you download the correct version for your system.

Tweak UI

With the generalities out of the way, let's take a closer look at a couple of powerful PowerToys starting with Tweak UI. Once installed, you can start Tweak UI by selecting Start, All Programs, Powertoy For Windows XP, and Tweak UI.

As mentioned previously, Tweak UI lets you alter the appearance and behavior of Windows. While you could perform many of these tweaks by editing the Windows Registry, Tweak UI makes it faster and safer to make these changes.

On the left side of the Tweak UI are several categories, many with subcategories (to view subcategories, click the plus (+) sign next to the main category). Depending on the category or subcategory selected on the left side of the window, different options appear on the right.

For instance, using Tweak UI you can turn off the (overly) helpful balloon tips that occasionally appear in the WinXP

System Tray. While you could disable this feature by editing the Registry, all you need to do in Tweak UI is click Taskbar And Start Menu on the left side of the window and clear the check mark next to Enable Balloon Tips.

SyncToy 2.0

SyncToy 2.0 is another powerful and useful PowerToy. Microsoft recommends you manually update both folders prior to installing SyncToy 2.0.

The first time you run SyncToy (select Start, All Programs, and SyncToy 2.0), you'll need to create a folder pair. Click the Create New Folder Pair button near the bottom of the SyncToy window. Click the left Browse button and select the folder with all the current information. Next, click the right Browse button and select a second folder. We recommend placing the directory you work from most often on the left side of the window. Click Next.

By default, SyncToy will synchronize files between the two folders so that any change in one is reflected in the other. However, you can set SyncToy to Echo or Contribute instead. In Echo mode, any change to the left directory is reflected in the right directory. Contribute mode is very similar to Echo mode, but files in the right

folder are not deleted when you delete files in the left folder.

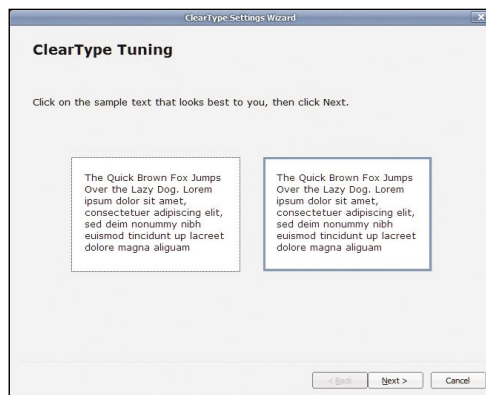
Finally, provide a name for the folder pair and click Finish. You can exclude certain files or make changes to the default options by clicking the Change Options link near the bottom of the window. You can also change the action (Synchronize, Echo, or Contribute) by clicking the Change Action link near the middle of the window. We recommend clicking the Preview button before you synchronize to make sure you don't accidentally overwrite any important data. When you're ready to synchronize (or echo or contribute), click Run.

If you have multiple folder pairs, you can select the correct pair by clicking the folder pair name on the left side of the main SyncToy window or select All Folder Pairs to synchronize everything.

Enjoy The Power

Whether you're looking to manage the color of your professional images, synchronize data, or just graph a mathematical function, there's a PowerToy for you. ■

BY CHAD DENTON



ClearType Tuning lets you optimize ClearType for your LCD by asking you to choose the clearest text from two or more options (a bit like a visit to the eye doctor).



Windows Vista

Make Your Desktop Aero-Dynamic

Say what you will about Windows Vista, but it's a pretty operating system. It's even prettier once you enable Aero.

Microsoft and others call Aero a theme, an interface, a visual style, a color scheme, or a user experience. Put simply, Aero makes the borders of application windows and dialog boxes look like glass, complete with reflections and Desktop icons showing through. Besides eye candy, Aero also adds a few other graphics-based features to Vista, some of which you may come to rely on.

To do all this, Aero taps into the 3D capabilities of recent graphics adapters. Vista can only run Aero on computers with a certain level of hardware, including a graphics chip compatible with DirectX 9 and later. The graphics adapter must meet certain other requirements, as well (see the "Aero Availability" chart in this article).

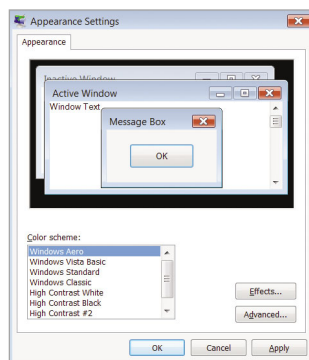
And there's the rub. If your computer's video card or integrated graphics are too old or wimpy, you can't run Aero. (However, Microsoft got into some legal hot water because it allowed PC manufacturers to market some computers with "Vista Capable" logos, even though the systems couldn't support Aero.)

Going Aero-bic

There's no single Enable Aero button in Vista's Display Properties. Instead, it takes a few steps to turn on this attractive visual style.

First, right-click a blank part of the Desktop and select Personalize. Next, click Theme. In the Theme drop-down menu, choose Windows Vista. Click Apply and OK.

For the second step, in the Personalization panel, choose Window Color And Appearance. In the Color Scheme menu, highlight Windows Aero and then click Apply. After a few seconds, Vista will redraw your Desktop using the new



Here's the Window Color And Appearance panel before we enabled Aero. Notice that the light blue border is opaque and doesn't let you see what lies underneath it on the Desktop.

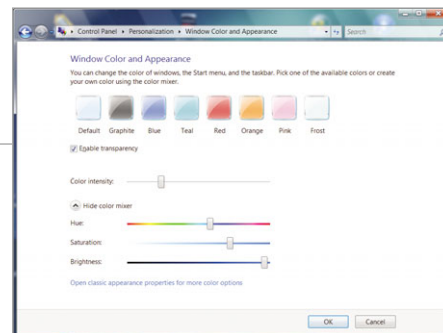
Aero scheme. The borders of the Personalization panel and any open windows or dialog boxes should now appear translucent. (See the next section, "Aero Glass," for tips on how to customize this.)

If you've recently upgraded your graphics card, and you weren't able to turn on Aero before that point, you'll need to take extra steps before Vista will let you enable Aero. First, download and install the latest graphics driver from the manufacturer of your new card, such as Nvidia (www.nvidia.com), Intel (www.intel.com), or ATI (ati.amd.com). Next, tell Vista to rate your computer with a new Windows Experience Index score. Click Start, Control Panel, and System And Maintenance (or System in Classic View). Now click Performance Information And Tools (or the Windows Experience Index link in the System window). Click Refresh Now or Update My Score. Vista will test your video card, CPU, RAM, and hard drive; assign each a score or two; and report your computer's capabilities. If your system meets the requirements to run Aero, you'll be able to enable it as directed above.

Aero Glass

This feature sets Aero apart from Vista's other themes. If you move the border of an open application window over an icon on your Desktop, and you can see the icon peeking through, you have Aero enabled.

To change the color and saturation of the window borders, or to turn off the translucency feature (which may bog down a PC that only barely meets Aero's system requirements), click Window Color And Appearance in the Personalization window. You'll



After we enabled Aero and closed the Aero and closed the panel, we clicked Window Color And Appearance again, and it looked like this. Besides the obvious change in settings content, you now can see through the translucent border of the window.



The Live Thumbnails feature is reason enough to enable Aero. Hover the mouse pointer over an application tile on the Taskbar, and you'll often see a full-motion thumbnail of whatever the app is doing.

notice that this settings panel looks very different when you have Aero enabled than it did under other themes. You can choose among eight preset colors or click Show Color Mixer to roll your own custom hue using sliders. The Intensity slider adjusts the boldness of the border color, and the Enable Transparency checkbox lets you return the borders to opacity without losing Aero's other benefits. If you want to turn off Aero completely by selecting a different Color Scheme, click Open Classic Appearance Properties For More Color Options. Click OK when you're done.

Finally, note that some power-saving settings automatically turn off Aero Glass. Microsoft recommends using the Balanced power plan to use Aero with a laptop, for instance.

Live Thumbnails

Here's one of the most useful features of Aero, hands down. Quite often, we lose track of the four or five apps we have open at once. When the Taskbar is crowded with buttons, we can't always read enough of the app, document, or Web page name to get an idea of each window's contents.

In Aero, you don't have to click the Taskbar button to restore the app to its full size in order to find out what it contains. Aero lets you simply hover your pointer over the button instead. You'll see a thumbnail of the contents of the window or dialog box. It won't be large enough to make its text legible, but it will give you a decent look at the objects and layout of whatever the underlying app is currently showing.

And we do mean "currently showing," as these are live thumbnails. Often, when an app changes, its live thumbnail will keep pace. A live thumbnail will even show video clips playing, although not in all cases. (A live thumbnail of Roxio Venue playing a film we had downloaded from Cinema-Now.com simply displayed a movie reel icon.) Moreover, Windows Media Player's live thumbnail mirrored a video file it was playing, but it wouldn't show a real-time representation of a visualization keeping time to the beat of a song.

Windows Flip 3D

Have you ever used the ALT-TAB combination keystroke to jump from one open app to another? If so, then you already know how to use Vista's Windows Flip. Simply hold down the ALT key and press TAB. You'll see a horizontal bar on-screen with icons for each app that's currently open. Press TAB a few

times until you've highlighted the app you want to work with and then let up on the keys to maximize the program.

Aero adds a high-tech twist to ALT-TAB. It's called Windows Flip 3D. It shows large, live thumbnails of the open apps and the Desktop from an angled perspective, stacked like cards in a recipe box. To use it, hold down the WIN (Windows logo) key and press TAB until the window you want is in the forefront. Let up the keys to maximize or restore the foremost application (or the Desktop, as it's one of the options).

In either Windows Flip or Windows Flip 3D, you can add CTRL to the combo keystroke so you won't have to hold down the ALT or WIN key as you TAB through the icons or thumbnails. For instance, press CTRL-WIN-TAB to stick a Flip 3D array on the screen and then let go of the keys. Now you can use TAB, the arrow keys, or the scroll wheel of your mouse to shuffle through the applications. Press ENTER or click the foremost window to select it. You also can simply click any thumbnail in the "stack" to restore it to its original size.

By the by, if Vista's Sidebar disappears after you switch to the Desktop using either Windows Flip or Windows Flip 3D, simply right-click the Taskbar and choose Properties. For whatever reason, opening the Taskbar And Start Menu Properties panel "reminds" the Desktop to display the Sidebar.

This Aero Doesn't Fall To Earth

Microsoft says Aero makes Vista more stable with fewer blue screen errors caused by graphics issues. Professional designers may appreciate the theme's support for graphical detail levels up to 144dpi (dots per inch) with certain apps. But don't worry if you like Aero for its beauty. We won't tell anyone. ■

BY MARTY SEMS

Aero Availability

Microsoft says that to support Aero, your PC should have a 1GHz processor, 1GB or more RAM, and a DirectX 9 graphics card with at least 128MB of video RAM (more for larger monitors), hardware support for Pixel Shader model 2.0, and a WDDM (Windows Display Driver Model) graphics driver. The graphics adapter should be set to 32-bit color depth. ■

Version Of Vista Aero?

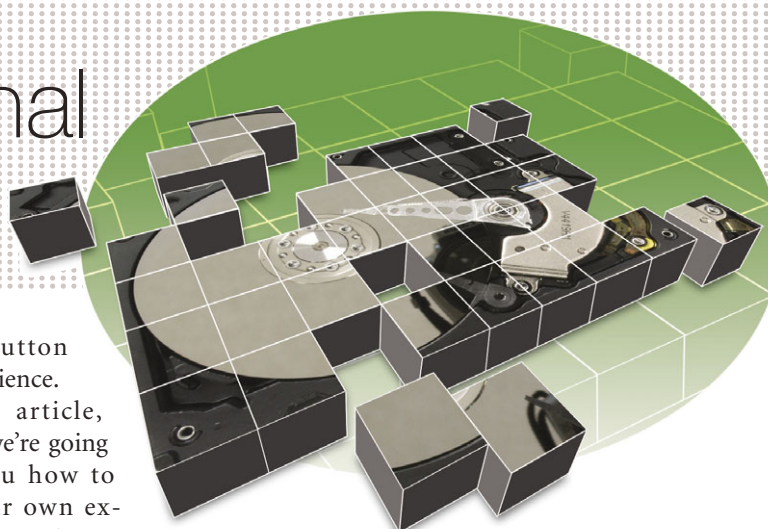
Home Basic	no
Home Premium	yes
Business	yes
Ultimate	yes
Enterprise	yes

Other Versions Of Windows

Home Server	no
Server 2008	yes
Mobile	no

DIY Project

Build An External Hard Drive



When you need to move an enormous quantity of files from one computer to another, a USB flash drive probably won't be big enough to do the job in one trip. The same goes for DVD or CD, which adds the additional hassle of burning and swapping media. Capacity isn't an issue if you have time to network the PCs, but your speediest option is an external hard drive.

Speaking of speed, external drives have taken the work out of computer backups. With DVDs, CDs, or a tape drive, backups are ponderous affairs. But with a fast USB 2.0 or eSATA (external Serial Advanced Technology Attachment) hard drive attached to your computer, backing up your files can take mere seconds.

Taking It Outside

The easiest path to external drive ownership is to buy one preassembled. These often come with basic versions of backup software and other useful utilities. Some even have a

backup button for convenience.

In this article, however, we're going to tell you how to build your own external drive using an enclosure kit. Most come with everything but a hard drive, including a data cable and an AC power adapter (if needed).

You can recycle an old internal SATA or IDE (Integrated Drive Electronics) hard drive as an external unit by buying an enclosure kit with the right size and internal interface. Alternatively, you can buy a new drive. Check with the enclosure manufacturer to make sure that it is rated to handle the new drive's capacity, especially if it's 1TB (terabyte, or 1,000GB) or more.

Shopping

The hard drive's form factor (size) will determine the type of enclosure you should buy. For instance, most desktop computers use 3.5-inch drives, so named for the typical diameters of their hard disks.

3.5-inch. A 3.5-inch desktop hard drive is slightly wider than its name and will fit in an external enclosure that is made for

3.5-inch drives. You'll get the most bang for your buck in terms of gigabytes per dollar with a desktop drive like this. However, it will be too fragile to carry around with you unless you're very careful. These 3.5-inch drives are meant to stay put on your computer desk.

2.5-inch. On the other hand, 2.5-inch and smaller external drives are tough enough to consider portable. Sure, you can still kill one with a good dash to the pavement, but you have to work at it a little. These are based around notebook drives, which can handle more physical abuse than desktop drives. As you can guess, 2.5-inch notebook drives are slightly wider than 2.5 inches, and they're considerably thinner than 3.5-inch desktop drives. They also have lower capacities, as their platters are smaller in diameter, and offer fewer gigabytes for the money.

A 2.5-inch USB hard drive has one more advantage over its 3.5-inch brethren. It can probably get its power through the USB cable. A bus-powered drive means no bulky AC adapter to cart along.

Interfaces. External drives use one or more interfaces to connect to computers. It's a good idea to buy an enclosure kit with more than one type of connection so that if you need to access the drive with various



This Vantec external enclosure kit features speedy eSATA and broadly compatible USB 2.0.

desktops and laptops, you can use the fastest port each offers.

USB 2.0 is by far the most universally compatible cable connection for an external drive, but it, like 400Mbps (megabits per second) FireWire, limits real-world throughput to the low 30MBps (megabytes per second) range. The vastly swifter USB 3.0 is on the way, but it hasn't arrived as of press time. The Mac-centric 800Mbps version of FireWire doubles its 400Mbps sibling's throughput, but this interface still keeps current hard drives from reading and writing as fast as they could.

There's more room to run with eSATA, which allows an external hard drive to perform virtually as fast as it would on an internal SATA connection. That means a ceiling of approximately 150MBps (somewhat less in practice) for 1.5Gbps (gigabits per second) SATA or 300MBps for 3Gbps SATA; 6Gbps SATA is on the horizon. You'll need to install a SATA drive in an eSATA enclosure, mind you, as you can't use this sweet interface with an old IDE drive.

Other issues. Your choice of external drive kits gets a little more complicated if you hope to use a hard drive that runs hot, such as a 10,000rpm WD Raptor or VelociRaptor (www.westerndigital.com). Pick an enclosure with a built-in fan and ventilation slits.

Also note that some 2.5-inch VelociRaptors that have been factory-mounted in 3.5-inch heatsinks have SATA connectors in a nonstandard location, so they won't work in 3.5-inch enclosures that have data and power

ports mounted on a fixed backplane instead of flexible internal cables. If you want to build a VelociRaptor external unit, buy a "backplane-ready" VelociRaptor.

Other types of enclosures connect to a network router via Ethernet or have bays for two or more drives. Some of these can serve files across the Internet, stream audiovisual files to media extenders, and/or provide RAID (redundant array of independent disks) functions for data redundancy or higher throughput.

Physical Assembly

We had a reliable 3.5-inch, 160GB, Hitachi SATA hard drive left over from an upgrade, so we decided to put it in an external enclosure with a high-performance eSATA connector. A few PCs in our sphere of influence didn't have eSATA ports, however, so we wanted our new external drive to have the slower but more compatible USB 2.0, as well.

For about \$34, we bought a Vantec NexStar 3 NST-360SU-BK (www.vantecusa.com). This glossy black beauty draws the heat out of a hard drive with its extruded aluminum frame. It also comes with a sturdy stand, so we could use the drive standing on edge or lying on its side.

As you work, be careful not to drop your hard drive or knock it against anything, including the surface of the table or desk. Ground yourself occasionally by touching a metal lamp or

other grounded appliance. Try not to touch the sensitive components on the hard drive's or enclosure's exposed circuit boards, as your finger oils can have a deleterious effect on chips and other parts over time.

Assembly. Lay the NexStar 3 enclosure on its side on the desk, label side down. Unscrew the two small screws in the rear panel, if present, and then pull the attached drive caddy a few inches out of the enclosure. Disconnect the front LED (light-emitting diode) cable from the header (row of pins) on the circuit board and then slide the caddy completely out of the shell.

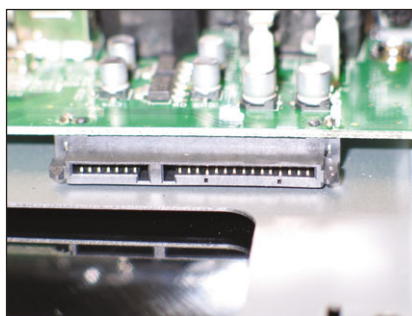
Next, gently lay your SATA hard drive on the desk, label side down. (If you're installing an IDE drive in a compatible enclosure, first set its jumper to Master or Cable Select as the external kit's manual tells you to.)

Turn the drive caddy over and then slide it along the bottom of the hard drive until its circuit board's SATA connectors click into the drive's power and data ports. (If your enclosure has cables, carefully attach them to the drive's connectors.) Align the drive caddy's slots with the four mounting holes on the underside of the drive and then insert and tighten the drive in place with the included screws. The interface end of the drive should butt up against the circuit board when the connectors are properly attached; the other end of the drive will extend a few inches past the tip of the caddy.

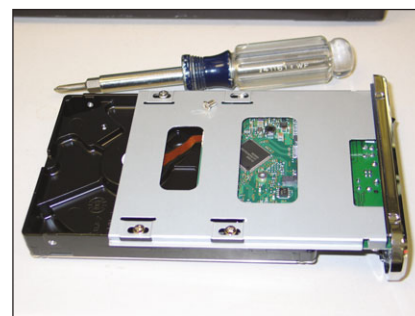
Now, turn the assembled drive and caddy over and carefully slide them into



Unscrew the rear panel, slide the drive caddy partway out, and disconnect the LED cable.



The caddy has a SATA backplane that slides into the hard drive's power and data ports.



Next, screw the caddy to the underside of the drive.

the enclosure, taking care to keep the LED cable extended outside the case. You'll need to align the metal lips along the sides of the caddy with the U-shaped guides inside the shell. When the rear panel is a couple of inches from the enclosure, reattach the LED cable to the header on the circuit board. (If the front of the NexStar 3 doesn't light up later during use, reattach the cable connector upside-down.)

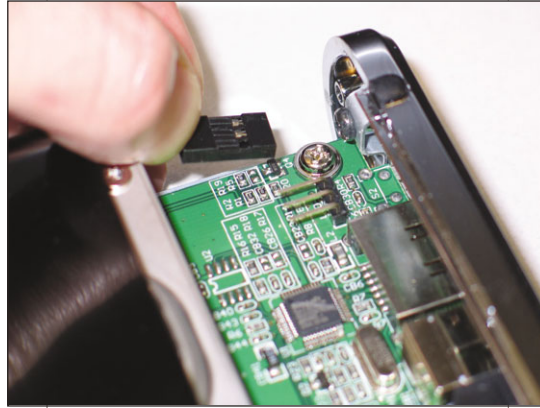
Close the rear panel and then use the two included screws to fasten it to the enclosure. It's a little tricky to get the screws started straight, so take your time. Be very careful here, as you don't want to strip out the C-shaped aluminum holes with too much muscle.

Finally, connect the external drive to your PC with the eSATA or USB cable. Hook up its AC adapter and plug it into a surge protector, but don't turn on the drive's power switch just yet. It's time to reboot the PC, and a running external hard drive can mess up the boot drive priority list on some computers. A good rule of thumb is: Always turn on your external drive after your PC boots to the Desktop and always turn it off after Windows shuts down.

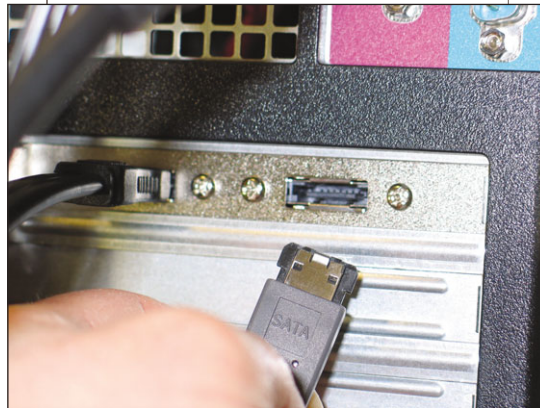
PC Prep

Whichever type of cable your new drive uses, you should enter the PC's BIOS (Basic Input/Output System) Set-up to make sure the proper USB, FireWire, or SATA/eSATA port is enabled. As you restart the computer, quickly press the indicated key (such as DELETE or F2) to enter Setup. Use the indicated keys, such as arrow keys and ENTER, to find and enable the port in the settings lists. Save changes and exit.

It's easy to add eSATA to most PCs that lack it. An inexpensive expansion slot bracket can cost less than \$10. Simply install it in place of the blank plate covering an unused expansion slot



Before you fasten the rear panel to the enclosure, slip the LED cable connector onto its header. Don't pinch the cable during final assembly.



We installed an eSATA bracket in an expansion port slot in the rear of this PC. The bracket's cable connects to a SATA header on the motherboard.

in the rear of the PC and attach its cable to a SATA header on the motherboard.

Drive Prep

After your computer restarts, turn on your external drive. Windows Me/2000/XP/Vista and Mac OS 9 and later should automatically detect your new drive. If not, enter the Device Manager (click Start, right-click Computer, click Manage, click Device Manager) and then click Disk Drives, Action, and Scan For Hardware Changes. (For Windows 98SE and MacOS 8.6, follow Vantec's instructions to install a driver.)

Press WIN (the Windows logo key)-E to launch Windows Explorer. If your external drive doesn't show up in a minute with its own drive letter (which will only happen with a drive you've previously used), you need to initialize and/or partition and format the drive before using it.

In WinXP/Vista, select Start, Control Panel, Administrative Tools (in Classic View), Computer Management, and Disk Management. In the lower-middle frame, right-click the name of the new drive, such as Disk 1 (make sure it doesn't have any drive letters next to it, such as C:, and double-check its capacity to ensure you have the correct drive). If there's an Initialize Disk option, click it and follow the wizard to set up the drive with an MBR (master boot record).

Now, you can partition and format the drive. Right-click its Unallocated label and choose New Simple Volume (Vista) or New Partition (WinXP). Follow the wizard to assign the external drive a primary partition (if prompted), a drive letter, a label such as Backup, and a file system such as NTFS (don't use FAT32 unless you need to use the drive with older computers). Click the Perform A Quick Format checkbox and then finish the wizard.

Press WIN-E to return to Windows Explorer and ensure that the new drive has the letter and label you assigned to it. If so, you're all set to copy files to it and set it up as the destination drive in your favorite backup software.

Should you need to turn off your USB drive before you shut down Windows, click the Safely Remove Hardware icon in the System Tray and choose its drive letter. For eSATA, uninstall the drive in the Device Manager.

And that's it. You're all set. For swift backups or massive file transfers via "sneakernet," your external hard drive will definitely come in handy. ■

BY MARTY SEMS

Size Things Up

How To Find A Font That Fits

Reading information in Windows Vista and Internet browsers can become problematic when you have difficulty viewing the fonts, icons, and menus. Both Vista and Internet Explorer allow you to change text sizes so you can more easily read windows and Web pages.

Changing Font Sizes

In Vista, you can modify the text that appears in the windows you're using, the Start menu, the Taskbar, and other programs. Click Start, Control Panel, Appearance And Personalization, and then Personalization. Click Adjust Font Size (DPI) in the Task pane. By changing the scale of the dpi, or dots per inch, you can decrease or increase the size of the text. There are two text size choices: Default Scale (96 DPI) and Larger Scale (129 DPI). To enlarge text and other items, click Larger Scale (129 DPI).

You also have the option to select from other dpi settings. At the bottom of the DPI Scaling window, click Custom DPI. Next, click the drop-down menu and choose one of the four dpi sizes, then click OK. Finally, click OK in the DPI Scaling window.

Altering Icon Sizes

Vista lets you change the size of your icons on your Desktop, Taskbar, and Explorer. To alter the icon sizes on your Desktop, first minimize all open windows. Next, press the CTRL key and use the scroll wheel on your mouse to increase or decrease the size of your icons by scrolling up or down. You can also right-click the Desktop, select View, and choose from Large Icons, Medium Icons, or Classic (Small) Icons.

The Quick Launch section of your Taskbar lets you access programs with a single click. You can enlarge the

Magnifier

The Magnifier tool is ideal for zooming in on particular areas. To activate the Magnifier, click Start, Control Panel, Ease Of Access, Ease Of Access Center, and Start Magnifier. Vista lets you modify the scale, docking position (the location of the magnified region), and tracking (how you want to magnify an area, window, or text) in the Magnifier window. **I**

Quick Launch icons via a few simple steps. Begin by unlocking the Taskbar. Right-click the Taskbar area. If you see a check mark by the words Lock The Taskbar, uncheck this option. Next, right-click the area that houses the Quick Launch icons (but don't click the icons themselves), click View, and then choose Large or Small Icons.

If the icons in Windows Explorer seem too small to you, click the arrow next to Views to open the list of organizational and size options. Shift the slider to your preferred icon size: Small, Medium, Large, or Extra Large. Alternatively, you can click Views to decide which style works best for you.

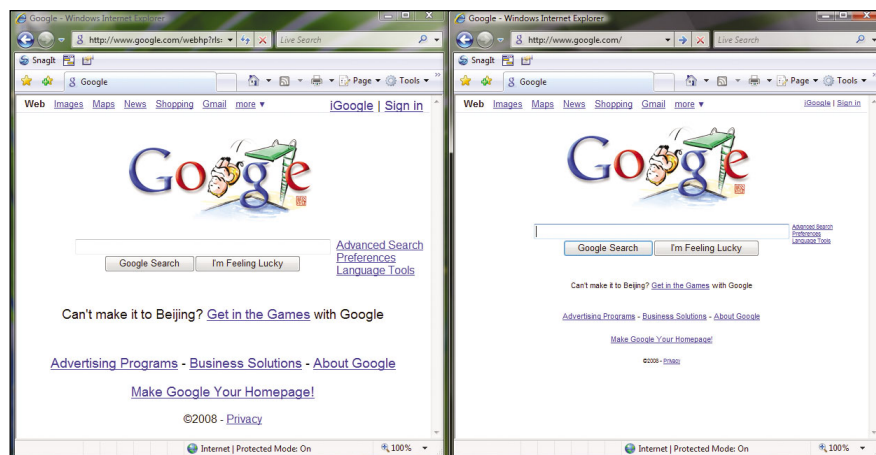
Internet Explorer Text Size

As you're browsing numerous Web sites, you'll undoubtedly come across pages with overly large or far-too-small fonts and icons. IE includes a quick solution for font changes. Click the drop-down arrow on the Page menu and move your mouse cursor over Text Size. Select a font size option from the following choices: Smallest, Smaller, Medium, Larger, and Largest.

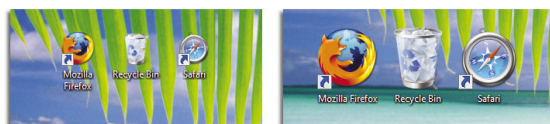
More Web Options

Keep in mind that certain Web sites provide built-in text size controls. For instance, if you're a Yahoo! member and use My Yahoo!, you can change the font size of the text on your My Yahoo! page. To make this alteration, click Change Appearance and Font Size and choose Standard or Large. **II**

By JOANNA SAFFORD



The Web page on the left is displayed in the Largest text size; the example on the right is in the Smallest text size.



Left: These three icons are default size. Right: We enlarged these icons by pressing CTRL and using the mouse scroll wheel.

Regain Control Of Your Windows

Manage The Size Of Your Program Windows

There are lots of annoying things in life you can't control, so let's focus on one annoyance that is completely in your control. When you open a computer program and the program window isn't the size you want—either it's too big or too small for your taste—you can tweak your computer's settings or download a program that will help you be more in charge of your programs' window sizes.

Tweak Windows Folder Options

If you want to be sure your Microsoft Office documents (for example) open in a full-screen window, and your Web browser opens in a smaller window, you can do so by changing the settings in your Folder Options.

In Windows Vista, open your Start menu and then click Control Panel. Next, select Appearance And Personalization (Appearance And Themes in Windows XP), select Folder Options, and then click the View tab. Under Advanced Settings, place a check mark in the box next to Remember Each Folder's View Settings. Click the Apply button and then click OK. After you have enabled the feature that remembers each folder's view settings, each program window will open the same size you had it when you closed the program.

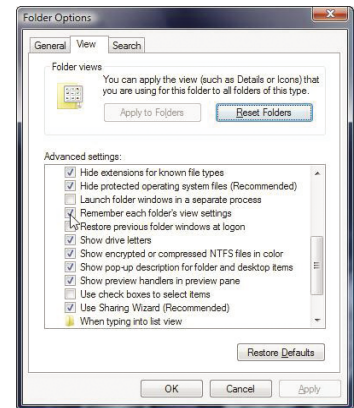
More Control

If you want even greater control over program windows, you can

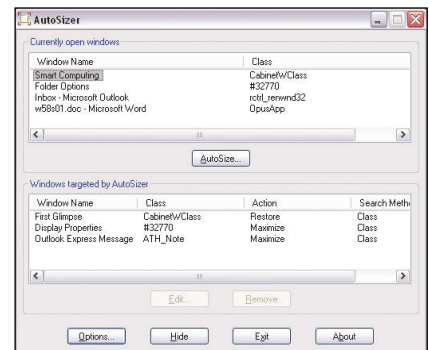
download freeware, such as AutoSizer (www.southbaypc.com/AutoSizer) or the Auto Window Manager (www.eusing.com).

With AutoSizer, you can choose among different options (Maximize, Minimize, Restore, Center, or Resize) for each of your open windows. The same goes for a different category of windows, titled "Windows Targeted By AutoSizer." These are windows that you choose to place on the list so that they open according to your set preferences. For example, if you select Center for a program you've added to this list, AutoSizer brings that window directly to the center of your monitor in the size you have already programmed it to be. If you select Resize, you are able to choose the size you want the window to be, in addition to selecting where on your screen the window should open (in the bottom-left corner, for example). AutoSizer is available for both Vista and WinXP.

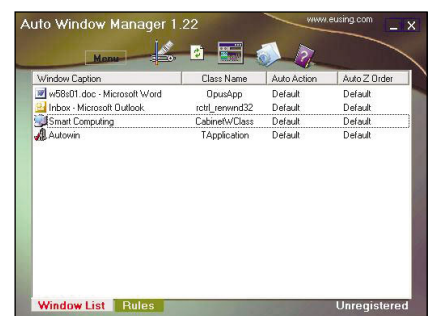
When you open Auto Window Manager you see a list of all of the windows you currently have open. Auto Window Manager has a few more options than AutoSizer, however. Click to highlight which window you want to customize and then click Menu. You will have the option to make the selected window stay on top of all other windows, make the window transparent (you choose the transparency), choose the alignment (where it's located on your screen) of the window, or resize the window. Additionally, you can add rules to ensure your settings will be



Click the checkbox to enable the Remember Each Folder's View Settings feature in Folder Options.



AutoSizer controls the windows you currently have open and those you choose to have on a separate list so that they will open according to your preferences.



Auto Window Manager lets you add rules to control how windows will appear the next time you open a specified program.

kept in place for next time. Auto Window Manager is supported by WinXP and Vista. ■

BY TESSA WARNER BRENNAN

Data Recovery Software

Do You Get What You Pay For?

We've all been there. We've all lost data.

Sometimes we delete the wrong file while holding down the SHIFT key, so it goes straight to perdition without a chance at redemption in the purgatorial Recycle Bin. Other times, we accidentally format the wrong hard drive or partition (a section of a drive, usually with its own drive letter such as E:).

In many cases, your digital data is still there on your hard drive, even though you can't access it in the usual ways. For instance, emptying a deleted file out of the Recycle Bin doesn't banish it from your hard drive forever, although it does move the file to a hidden system folder and tell the file system that the space is available the next time the drive has to save some data.

At times like these, file recovery software can pull your digital bacon out of the fire. Its job is to probe your hard drive (and sometimes other types of storage media, such as memory cards and CDs/DVDs) for the patterns of "lost" or deleted files and to reconstruct them for you, if possible. Sometimes only fragments are left, but in other cases, a good data recovery utility can present you with complete copies of your resurrected files.

Recuperation Tactics

When you lose data, you'll stand the best chance of recovering most of it if you stop writing data to that hard drive partition. For example, don't download or install anything to your C: drive if that's where the lost files resided. This is

critical because if any new data overwrites your lost files, they will be gone for good.

Also, turn off any automatic defragmenting software and don't run any disk repair utilities, such as Windows' Error-Checking feature. If you make a backup, do so to fresh media. That is, don't overwrite a known good backup in case some of your files are corrupted.

If possible, use a different PC to download recovery software and install it to a USB flash drive, which you can then connect to the problem computer. All of the software we tested will run from a USB drive. Alternatively, you can buy a recovery utility that can run from its installation CD. If you can't run a utility from a USB drive or disc, install it on a second PC's hard drive, then connect your problem drive to the system.

After the software finds files it can recover, save them to another hard drive, such as an external unit, or a USB flash drive. Never save them to the same drive, even on another partition. If the drive is slowly failing, you might lose the data again.

Some recovered files might be incomplete, such as partially garbled Word documents, songs that start in the middle, or photos with the tops or bottoms cut off. In other cases, a file might be intact but may have a new name. In one of our tests, a recently deleted audio file labeled 01 Wolfboy.MP3 became \$R2T0SCZ.MPE after Phoenix Undelete Plus brought it back from the dead.



Of course, sometimes not even the best recovery utility can help. Whether your data can be retrieved hinges mightily on whether your drive is still in 100% physical shape. If part of the drive is broken or defective, there's not much the average user can do. In a case like this, your only hope is to contact a professional drive recovery service, which can extract some or all data from even a damaged drive. On the downside, recovery services may charge more than a thousand dollars.

Oh, and by the way: Don't put your hard drive in the freezer. Odds are it will hurt instead of help.

Testing

We set up a Hitachi 500GB hard drive with three NTFS (NT file system) partitions on a Windows Vista system. On each of the three volumes, we put ten files of various types: three MP3 (Moving Picture Experts Group-1, Layer 3) audio files, two JPEG (Joint Photographic Experts Group) photos, a BMP (bitmap) image, a PNG (portable network graphics) picture, a WMV (Windows Media video) video file, an RTF (rich text format) letter, and a TXT (text) document.

On the first partition, we pressed SHIFT-DELETE to nuke the files and bypass the Recycle Bin. The second partition we reformatted with NTFS (with

the Perform A Quick Format checkbox enabled). We reformatted the third volume with NTFS at the default setting, which does a slow, thorough format.

To avoid contamination of the test partitions, we disabled Windows' automatic defragmenter. We also installed all of the recovery utilities on a TDK 16GB USB flash drive and ran each from there. We recovered all files to a separate hard drive.

File Recover 7

\$29.95

PC Tools

www.pctools.com

Hurling over the transom just before press time was PC Tools' File Recover. This Windows 2000/XP/Vista (32-bit) utility handles FAT16/32 and NTFS file systems. It comes with a trial version that shows you the files it can exhume if you buy a license code.

PC Tools' reasonably friendly GUI (graphical user interface) gives you Quick, Deep, and Physical Scan options. The Physical Scan takes a long time because it analyzes the entire drive and doesn't let you confine it to a particular partition. The Deep Scan gave us the best results in each test, although a fully formatted volume was beyond its ken. It turned up all but one JPEG in the recently deleted fileset and found everything in the quick-formatted partition except for the same JPEG, the RTE, the TXT, and the WMV files.

The application lets you filter out a moderate list of known file types from the recovery effort, including compressed files (ZIP, CAB, and RAR), DBX Outlook Express archives, and Apple's iPod and Quicktime video formats, including M4A, M4V, MP4, and MOV.

File Recovery For Windows

\$129

Seagate

services.seagate.com

We have long turned to Seagate's free SeaTools hard drive diagnostic

software whenever we need to thoroughly examine a problem disk, as well as every brand-new drive before we entrust our data to it. The company's File Recovery For Windows inspires a similar level of trust.

This app was the only one to recover all ten of our recently deleted files. Like the others, it couldn't excavate anything from a fully formatted volume, but in our quick formatted

from R-Tools Technology and sells it as a service or as a discrete purchase for \$129. There's a free trial version, but it only recovers files under 64KB.

FRW can create an image file of your drive, including any deleted files, on another hard drive. This "snapshot" is a full backup of the drive lest you or the OS accidentally writes data to the original, overwriting some of the lost files. Seagate recommends using this

Create Image File command if you suspect that your original drive has bad sectors.

In addition, depending on the PC's OS and the file system on the drive to which you save your recovered files, the app can keep intact encrypted files, extended file attributes, and more. There's a hexadecimal editor for advanced users who want to alter files directly, too.

File Recovery For Windows' interface isn't as user-friendly as Pandora's, but it's worlds easier to understand than PC Inspector's. A useful trick is to scan a drive, then double-click the Extra Found Files entry that appears. Click the new tab of the same name, put a check mark in the box next to Root, and then click the Recover Marked icon. The software recognizes a long list of selectable file types, too.

Pandora Recovery 2

free

Pandora

www.pandorarecovery.com

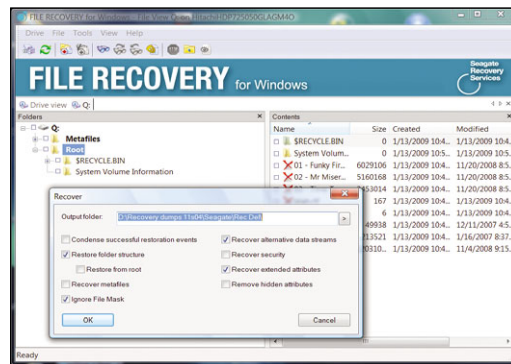
Consider this one a must-have. And why not? It's free for non-commercial use.

This WinXP/Vista/2000/Server 2003 download also is available preinstalled on a 512MB USB flash drive for \$39.95, which was on sale for \$19.95 at press time. The software covers all the important Windows file systems, including FAT12/16/32, NTFS, NTFS5, and NTFS/EF5.

Pandora's intuitive GUI makes it child's play to analyze your drive in three ways, including a surface scan. It



For a one-time cost of \$29.95, PC Tools offers powerful features and straightforward operation.



Seagate's File Recovery For Windows was the only app to bat .1000 with our recently deleted files.

partition it saved six out of 10 files (a JPEG, all three MP3s, the PNG, and the BMP).

File Recovery For Windows runs under a broad range of OSes (operating systems), including Win95/98/Me/NT/2000/XP/Server 2003 (NTFS and FAT 12 [for floppy diskettes]/16/32; it also worked on Vista for us) and Mac OS X up through Leopard on Intel or PowerPC platforms (HFS and HFS+ file systems). Seagate licenses the software

found everything but the PNG and BMP files in the recently deleted fileset. Oddly enough, although the surface scan is the most thorough option (and the only hope for quick formatted data), its short list of known file types meant that it couldn't find recently deleted RTE, TXT, and WMV files that the Browse and Search scanning methods recovered. The surface scan only recognizes 13 file extensions, although the list does include Office 2007's new Word (DOCX), Excel (XLSX), and PowerPoint (PPTX) formats. Use all three scanning methods for best results.

PC Inspector File Recovery 4

free

Convar

www.pcinspector.de

This freebie's confusing, quirky interface will turn off average users, but persistent geeks can eke out results. The trouble is, other free apps can do better with more intuitive operation.

PC Inspector supports NTFS and FAT 12/16/32 and can read damaged data from common memory cards, as well. It runs under Win95/98/Me/NT/2000/XP, but it worked for us in Vista, too.

This app's Find Lost Data operation returns uniformly sized fragments instead of whole files, so the trick to recovering bigger files is to change its default 1.4MB file size. Click Object, Options, and Files to set the default size to a slightly larger number of bytes, such as 13000000 for a 12MB file, to be sure that the recovered fragment will include the entire file.

Search And Recover 5

\$27.97 per year

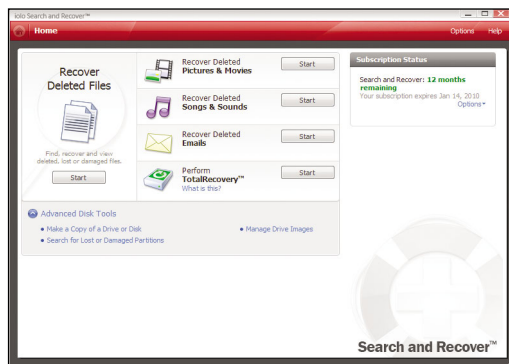
Iolo

www.iolo.com

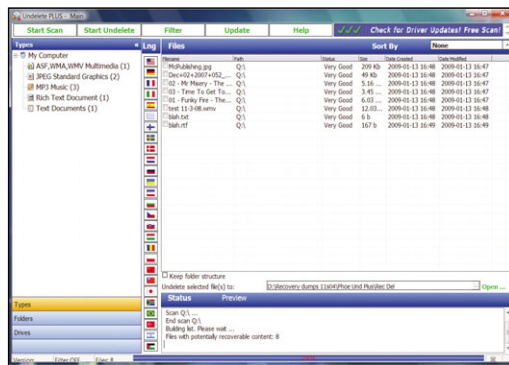
This easy-to-use file recovery utility is actually sold on a subscription basis like antivirus software. It costs \$27.97 for one year with an automatic renewal option for \$19.95 per year. The upside

to a subscription is that you'll always have the latest edition with support for new OSes, file systems, and storage devices as they emerge.

Search And Recover works on up to three PCs, and it runs under 32-bit WinXP/Vista/2000. If you buy its retail version on a bootable CD, you can launch the program from there. It worked flawlessly from our USB flash drive.



Iolo's Search And Recover also can cover your CD/DVD and flash memory cards.



Phoenix Undelete Plus is strictly for deleted files, but it's good at that job.

Speaking of flash, Search And Recover can fish data out of flash drives, memory cards, DVDs and CDs, and mobile devices such as MP3 players, not to mention hard drives. It can identify and retrieve deleted email messages from most popular clients, including Outlook Express, Eudora, and Thunderbird, along with contacts, tasks, and other special items from Outlook. The program

can copy entire drives and unearth damaged partitions, too.

Unfortunately, Search And Recover didn't do as well as some other contenders in our tests. In fact, a couple of free apps matched or excelled it. It couldn't find the PNG and BMP files in our recently deleted list. From the quick-formatted partition, it could only retrieve the two JPEGs, plus an MP3 and a half.

Moreover, version 5.0.2 would only let us recover one file at a time instead of all at once. Apart from that oversight, its ease of use is first-rate.

Undelete Plus 2.98

free

Phoenix Technologies

www.undelete-plus.com

This undeleter comes as a tiny 648KB EXE file you can run from a USB drive, as well as a traditional 3MB installer file. It's a cinch to use, and it can recover data from floppy drives and common memory cards such as SmartMedia and Secure Digital. It supports Win95/98/Me/NT/2000/XP/Server 2003/Vista and the FAT12/16/32 and NTFS/NTFS5 file systems.

On the downside, Undelete Plus retrieved fewer files than other utilities. Living up to its name, it could restore deleted but not formatted data. Also, it wouldn't let us select all of the recoverable files at once, so we had to click each one. The price is OK, though.

New Data's Resolution

We hate to say "we told you so," but if you're reading this article, it bears repeating: Remember to back up your data after each work session. With luck, you may never have another need for data recovery software—but if you do, you'll know what to do about it. ■

BY MARTY SEMS

Anatomy Of A Digital Camera

How The Magic Happens

As far as most of us know, a digital camera works like so: You aim at a subject and push a button, and a nice picture pops up on your camera's LCD. But, of course, there's far more to it than that.

The inner workings of even a simple point-and-shoot camera are complicated and fascinating. If you thought you knew about how a camera works because of your knowledge of film cameras, think again—digital cameras employ what, in some cases, is totally different technology that accomplishes essentially the same thing as a film camera.

Viewing & Framing

When you want to take a photo, the first thing you do is compose the picture. One of the truly appealing features of digital cameras is the LCD. This lets you compose the picture and focus on the appropriate subjects without having to squint through the viewfinder. This feature is especially welcome for those who wear glasses and have trouble seeing through the viewfinder.

In addition to using the LCD for composing photos, it's also used to navigate various camera options, such as different shooting modes and reviewing the photos stored on the camera.

However, the viewfinder (the way you had to compose a picture with film cameras), is still a useful tool. Even the brightest and largest LCDs can be tough to see in direct sunlight. If you're trying to see your subjects more clearly on a particularly bright day, the viewfinder is a saving grace.

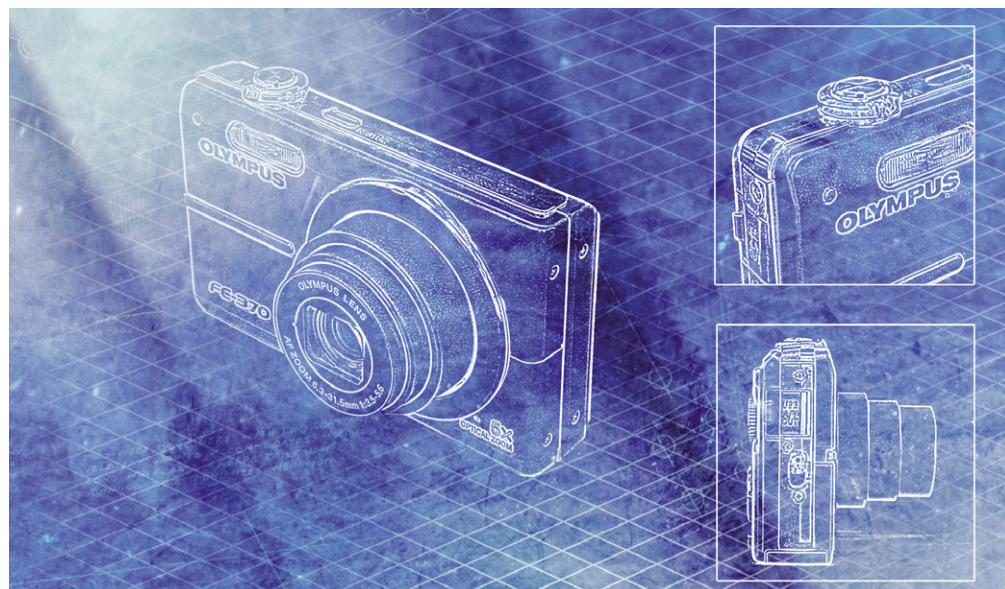
Once you have your subjects lined up, you have to focus on a certain part or parts of the subjects. For example, if you're trying to get a nice close-up of two smiling friends, you have to zoom in and focus on their faces. Digital cameras conveniently autofocus, so all you have to do is aim at the right targets, and the camera lens will do the rest.

Most digital cameras have zoom capabilities built into the lens. The strength of a zoom lens is defined by a number with an X, such as 5X or 10X. The number means that a given lens—for example, a 5X lens—is able to magnify a subject by a factor of five; a 10X lens multiplies it by a factor of 10, and so on. For an idea of how a magnification level equates to the focal length of a lens, bear in mind that a 1X zoom (or *no* zoom) is the same as a 35mm lens. (Most point-and-shoot cameras have an initial focal length of about 35mm—hence, 1X.) So, a 5X

zoom equals a 175mm lens, and a 10X zoom equals a 350mm lens. **Focal length** refers to the distance between the lens and the image sensor (or the film, in a nondigital camera).

This type of zoom is called optical zoom. Some users may be confused about the nomenclature of optical zoom vs. digital zoom. **Optical zoom** is a mechanical function of the camera wherein the lens optics move to magnify the view of the subject; the focal length actually changes. The **digital zoom** appears to zoom in on the subject after you've taken a picture, but what it does, in effect, is enlarge a portion of the image, cropping part of it and reducing the resolution (and, therefore, the quality) of the image. Generally, avoid using digital zoom if your goal is taking a crisp, high-resolution photo.

The **resolution** of a photo is related to the number of pixels in the image and not necessarily the size. The higher the number of pixels in an image, the higher the resolution. Another way to think of it is that an image of a certain size contains millions of tiny points of color, or **pixels**. When there are more points of color in that same space, the detail of the photo improves. Thus, a high-resolution photo is a better-quality photo.



Snapping A Picture

When you are done framing, zooming, and focusing, it's time to tell everyone to say "cheese," count to three, and press the shutter button. The **shutter** on a film camera is a mechanical device that opens when the shutter button is pressed to allow light to strike the film for a fraction of a second. On a digital camera, the shutter is more of an electronic on/off switch that does the same thing as a mechanical shutter—it allows light to pass through the lens and hit the image sensor.

When the shutter opens, the light strikes the camera's image sensor through the shutter opening. The image sensor will be either a CCD

use, how long the shutter will remain open, and whether to use a flash.

The ISO rating of a digital camera is the same as on a film camera—basically, it pertains to how sensitive the camera's image sensor (or film) is to light. The higher the number, the more sensitive the image sensor is. Therefore, a high ISO rating (such as 800 or 1600) is more ideal for taking photos in low-light conditions. However, the trade-off is that photos taken at high ISO speeds sometimes have "noise," or a grainy-looking appearance. For most situations, an ISO rating of 400 is plenty high.

SLRs (single-lens reflex) and DSLRs (digital-SLRs) often have a "hotshoe," or a spot on the camera body where you

about how to use camera settings, you'll probably get the best results by letting the camera choose the settings for you.

When the image is captured, a preview of the photo will appear on the LCD. This lets you view the picture to make sure you captured what you wanted and check for closed eyes, red-eye, incorrect focus, and more.

Storage

Digital photos take up a lot of space on a storage medium. Digital cameras have a certain amount of onboard storage, but it's usually not enough for a vacation's worth of photos. Thus, virtually all digital cameras have a slot for a memory card for additional storage.



The Olympus FE-370 (\$179.99; www.olympus.com) is an inexpensive digital camera with plenty of solid features.



You can control many functions with the control ring, including the zoom and shutter.



Most digital cameras have zoom capabilities built into the lens. The Olympus FE-370 has a 5X optical zoom.

(charge-coupled device) or a CMOS (complementary metal-oxide semiconductor). Though there has historically been a great deal of debate about which of the two technologies is better, they have both progressed to the point that the difference in quality is negligible, particularly for nonprofessionals.

It's impressive when you realize that the camera processes the following information almost instantaneously when you press the shutter button: If you have the camera set on an automatic mode, it will automatically decide what ISO speed (International Organization for Standardization) to

can add an external flash. This gives you more flexibility with the flash, including the ability to vary the intensity of the light and aim it. Most point-and-shoot digital cameras don't have a hotshoe, but you can still alter the built-in flash depending on the shooting mode you use. For example, you can usually toggle the flash settings to automatic, fill flash (which is designed to eliminate shadows), no flash, and more.

All of the above camera settings are automatic, but they can also be set manually on some digital cameras. In that case, however, you would need to set everything before you press the shutter button. Unless you're knowledgeable

Memory cards are tiny storage media that come in a variety of proprietary formats, including CompactFlash, Memory Stick, MultiMediaCard, SD (Secure Digital), miniSD, xD (eXtreme Digital)-Picture Card, and others. They're available in widely ranging capacities, commonly between 512MB and 4GB or more.

Bear in mind that, depending on the megapixel rating of your camera, these capacities will hold varying numbers of photos. A camera with a higher megapixel rating, such as 12MP, will snap photos that result in larger file sizes than a camera with a lower megapixel rating, such as 7MP.



Connect to your computer with the included USB cable.



Many cameras use AA batteries, while others are powered by rechargeable lithium-ion battery packs.



The LCD lets you compose the picture and focus on the appropriate subjects without having to squint through the viewfinder.

Digital cameras generally don't come with a memory card, so you'll have to purchase one separately. Each camera will require a specific type of memory

card, so be sure you get one that is compatible with your camera.

At some point, you will want to move your photos onto a computer for archiving, burning, sharing, or printing. One way to transfer your photos to a

computer is by removing the memory card and placing it in an external card reader that is attached to your computer. Some computers now have card readers built in, which negates the need for a standalone card reader.

But if you want to just transfer photos directly to your computer, your camera will have a USB port you can use. Many cameras will come with a USB cable, and all you have to do is connect your camera to the computer, turn on the camera, and let the transfer happen. Consult your camera's owners manual to see if you need to have the camera on a certain setting to transfer photos.

SHOPPING TIPS

What do you need to know before you buy a point-and-shoot digital camera? Here are a few tips.

Megapixels

Many people are still overly interested to know how many megapixels a camera has before they buy it. This concern is left over from the days when digital cameras were still very much a developing technology, and the number of megapixels was crucial to the usefulness of the camera. Cheaper (or older) digital cameras had so few megapixels—just one or two—that the resulting prints were grainy and low-quality; a camera with a higher megapixel rating was very exciting.

These days, even lower-end cameras sport 7MP or more, so any decent camera will have enough megapixels for

your needs. That is, unless you're interested in making poster-sized prints, in which case you'll want a camera with closer to 12MP.

Optical Zoom

Depending on what type of photos you plan to take, make sure you get a camera with a sufficient optical zoom. For example, if you plan to take pictures of sporting events (amateur or otherwise), you'll need a long zoom. Look for a camera with at least a 5X zoom or higher.

Shooting Modes

If you know next to nothing about taking photos, be sure the camera you buy has plenty of automatic shooting modes so your portraits, photos in low light, pictures of action shots, and so on look their best. On the other

hand, if you know how to change a camera's settings for any picture, look for a camera with a manual mode, as well.

Video

Many digital cameras have the ability to shoot short video clips in addition to taking photos. The quality isn't as good as that of a digital camcorder, but it's a neat feature if you want to capture quick movies.

Do You Like It?

The No. 1 factor in determining which digital camera to buy is whether you like the size, weight, and usability. Pick up each contender and go through the motions of taking a photo. Ask yourself if it fits in your hand comfortably, if the buttons are all convenient for you to reach, and if the LCD is large enough to suit you. **I**

Parting Shots

Though the many bells and whistles on digital cameras are helpful and fun to use, some of them drain battery life fairly quickly. Regular AA batteries are commonly used to power digital cameras, though Li-Ion (lithium-ion) and AA NiMH (nickel-metal hydride) battery packs are also popular. The upside to using regular or rechargeable AAs is that they're inexpensive and easy to find in a pinch, but they don't last especially long. Li-Ion battery packs and NiMH batteries are rechargeable and typically last longer per charge than AAs, but they're more expensive. Further, most Li-Ion packs are proprietary, so finding a backup set of batteries can be expensive and hard to do while out and about. **II**

BY SETH COLANER

Many of our readers come across fast, easy ways to solve a problem or accomplish a task. Well, we'd like to hear about it! If you have a great tip you'd like to share, email us at readertips@smartcomputing.com. If we print your tip, we'll send you a free *Smart Computing* T-shirt. You'll be the envy of all (well, some) of your friends.

Please include your first name, last name, and address, so that we can give you credit if we print your tip. (And so that we can send your T-shirt to you, of course.) Please limit your tip to 200 words or fewer. Not all tips received will be printed, and tips may be edited for length and clarity.

Short & Simple Tips To Make Things Easier

Connecting Hardware Devices

With multiple computers in my home, I have found that connecting or disconnecting devices on the back of my desktop computers is a pain in the neck. There isn't enough room to have them on my computer desk so that the backs of the computers are accessible, and all those cables confound the issue. This is especially true of a new desktop computer because I am unfamiliar with all of the new connections and their locations. I have used USB hubs, but they just add to clutter on the desk.

Recently, I wanted to open my case on the new computer, and I disconnected all devices. Before I returned it to its designated place of honor under my desk, I took several pictures of the back of the case with my digital camera and loaded them in My Pictures.

Today, I wanted to connect a microphone to the back. I pulled up the picture of my rear sound card connections, located the correct input connection on the picture, used a mirror to see the back of my computer, plugged in the microphone, and didn't have to move anything. Also, I will be using these pictures to research some of the newer types of connections (for example, HDMI [High-Definition Multimedia Interface], FlexiJack, etc.).

Judith G., Bethany, Okla.

Simple Solution For Lost Internet Connection

I had a problem with my wife's computer and spent several hours trying to figure out why she couldn't connect to the Internet. We share a room in our house and have a wired network between our systems. I was still able to get a connection, but her computer was not connecting. We run the same OS (operating system), Windows XP Home, and felt

we had not done anything to cause the problem. We hadn't added any new software or changed any system settings, and yet the problem persisted.

The next morning I tried one more idea to isolate the problem. I connected her computer directly to the source (cable modem) and discovered that although her system didn't connect to the Internet, I did get a different error message. I finally just disconnected the cable modem for several minutes and then reconnected everything back to the way it was, and like magic, her system was able to connect to the Internet. The problem appears to have been solved by just resetting the cable modem.

Ken R., Charlotte, N.C.

Back Up Your Owners Manuals

I download my owners manuals not just to my primary PC but also copy them to another computer (which connects online through my main PC) so that if one computer crashes, I can still access the manuals from the second computer. My tip: If your only manual is electronic, keep a copy on a different computer, just in case.

Cyndy M., Easton, Md.

Easily Select A Long List

Here's a tip regarding selection from a list of items. In addition to the method of holding down the CTRL key while using your mouse pointer to select items, a simpler method is to just select the first item and then, while holding down the SHIFT key, select the last item of the desired list/group. All of the items between the two will also be selected and may be dragged and dropped, copied, or even deleted without affecting the rest of the document or list.

Bob B., Carlisle, Pa.



Tips, Tricks & Treats

When you convert from PC to Mac, there are a number of little things you have to relearn. When you've been right-clicking for the last 20 years, for example, it's a hard habit to break. Or when you instinctively want to get to the Control Panel to change something, but there's no Start button to click. Or—well, you can fill in the blanks.

Whatever simple thing you've done on a PC a million times, it can be difficult to figure out how to duplicate it on a Mac at first. To help you along, here are a few tips to get you started in the right direction.

Tips Ahoy

Right-click is the key to a great number of menu options and functionality on PCs. If you have an Apple Mighty Mouse, you can just right-click like you normally would on a PC. In many cases, though, Mac users may find themselves instinctively going for the right-click only to find that there is no right mouse button. However, you can still “right-click” (known as a secondary click) on a Mac by pressing CTRL while clicking.

You can also configure your Mac to recognize a two-finger trackpad click as a secondary click; click the Apple icon at the top left of the screen and click System Preferences. Click Keyboard And Mouse under Hardware and click the Trackpad tab. Check the Tap Trackpad Using Two Fingers For Secondary Click box and close the window.

Attaching files to an email on a Mac is pretty slick. Just click and drag the file (or a group of files, if you want to attach several to the same email) to the Mail icon in the Dock. A new message will pop up with the files attached.

To compress a file and make a ZIP file, hold down the CTRL key and click a file and select Create Archive Of

[filename].

To make a ZIP file from several files, select the files you want to include by holding down Command (the key with the Command symbol near the Spacebar) and clicking each file. Then, hold down CTRL and click any of them and select Create Archive Of [x] Items.

Copy and Paste is very similar on a Mac and a PC. Instead of using CTRL-C or -V, press Command-C to copy and Command-V to paste.

Finder is the Mac equivalent of Windows Explorer. To open a new Finder window from the Desktop, press Command-N. Navigate through files and folders with the arrow keys. To open a submenu, highlight it and press the Right arrow key. You can also highlight a file and open it by pressing Command-O. Close a file by pressing Command-W.

Missing that Print Screen button? To take a screenshot on a Mac, it's almost as simple, but there are more options. Press Command-SHIFT-3 to take a simple screenshot. To snag a shot of a specific area, press Command-SHIFT-4. Then, you can click and drag over an area to select it for the screen shot. If you press Command-SHIFT-4-Spacebar, you can take a screen shot of a specific element on the screen, such as an open window or dialog box. In each case, the newly created image will be automatically saved on the Desktop.

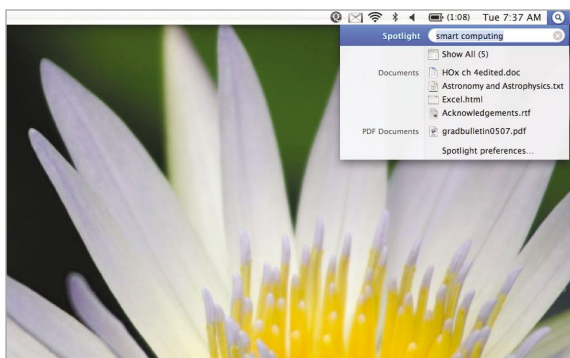
If you also press CTRL while performing any of the above actions (Command-CTRL-SHIFT-3, for example), the image will be copied onto the clipboard. Then you can paste the image to any location you wish.

Force Quit is what you use to kill a frozen program on Mac, just as you would use Task Manager on a PC. Click the Apple icon and select Force Quit. Or, you can press Command-Option/ALT-ESC and use the Force Quit dialog box to quit a specific application.

Instead of Windows Search, Macs have Spotlight. To use it, click the magnifying glass icon at the top right of the screen and enter a keyword in the search box. It's the fastest way to locate something on your system.

The Learning Curve

Sure, the curve can be steep when you're first learning how to get around on your new Mac but once you “get” where things are, you'll pick it up in a hurry. Hopefully these goodies will give you a great head start. ■



To use Spotlight, click the magnifying glass icon at the top right of the screen and enter a keyword in the search box.

Web Tips

Enhance Your Time Online

Resumes Made Easy

Problem: I wish there was a quick way to create and distribute my resume.

Solution: Emurse (www.emurse.com) doesn't take resumes lightly—in fact, this Web site provides multiple methods for potential employers to retrieve your resume. After you sign up for an account, you can create and personalize sections of your resume such as Work Experience, Education, and Skills. Emurse lets you select a template style on which to display your resume; select from Professional, Classic, Modern, or Elegant, among others.

Additionally, Emurse displays your resume at a URL for quick Web access. When someone finds your resume site, he can print it immediately or save it in common formats ranging from a Word document to

HTML (Hypertext Markup Language).

Online Seating Chart

Problem: I need to create a seating chart in a limited amount of time.

Solution: If you have to create a seating chart for a large number of people, but you don't want to do it from scratch, use SimpleSeating (simpleseating.com) to put your info into an already created professional chart. Maybe you're in charge of hosting a large party or you're the designated wedding party seater—SimpleSeating provides all the online tools you'll need.

One event arrangement is free (for no more than 50 guests); for a fee, you can arrange up to five events for 350 guests. The SimpleSeating tools let you upload a list or add guests and their party details one at a time so you don't miss anyone. Further, you'll be able to select table styles and placement as you assign each guest a seat.

Hassle-Free Budgeting

Problem: I want to keep a budget, but I don't have time to do it on my own.

Solution: With a free and secure user login, you can manage the movement of all your money at BudgetTracker (www.budgettracker.com). This financial tool organizes your income and bills via a monthly calendar—you can place meetings and reminders on this calendar, as well. On the My Bank Accounts screen, you'll be able to stay on top of everything from your checking to savings to PayPal accounts. My Income helps you monitor your earnings, while the My Transactions page moderates imports from your bank, Microsoft Money, and Quicken (with an upgrade to the Unlimited Plan; \$2.95 per month or \$24.95 per year). With a subscription, you can also attach images of receipts to your transactions.

Never Forget A Song

Problem: I want to know the name of a song, but I can only remember part of the lyrics.

Solution: This can be a real dilemma, especially when you've just heard a great new song on the radio, and you can't quite recall the title. Midomi (www.midomi.com) can help. Direct your browser

to Midomi.com where you can search a song by singing or humming a phrase. Midomi records your voice (you'll need a microphone, of course) and attempts to match your clip to the songs in its database. Be sure to record yourself for at least 10 seconds.

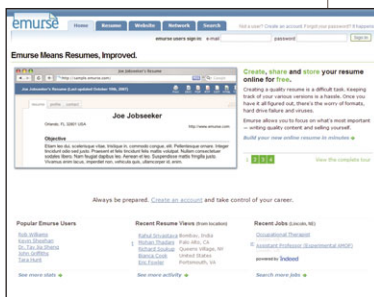
You can listen to other members' recordings by clicking Explore. If anything, this section provides entertainment—both ear-wrenching and soothing.

Dual Search Engine

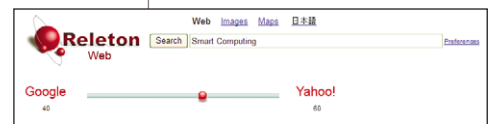
Problem: I want to search on more than one search engine at a time.

Solution: Releton Web (www.releton.com) combines the search power of both Google and Yahoo! to provide twice the search results. Enter your search subject in the Releton Search box. When your results appear, you'll be able to choose the percentage of matches you receive from Google or Yahoo! by shifting the search slider closer to Yahoo! or Google. You can also utilize Image search and the Maps application for each engine. ■

BY JOANNA SAFFORD



If you are intimidated by compiling a resume, you can use Emurse to build a solid format that showcases your skill set.



Slide the Releton search meter to the search engine you prefer most, and you'll receive more results from either Yahoo! or Google.

Compiled by Kris Glaser
Illustrated by Lori Garriss

Find It Online

Lend A Helping Hand Online

VolunteerMatch

www.volunteermatch.com

This site aspires to bring together “good people and good causes.” If you’re not sure what types of volunteer opportunities are available or what type of volunteer activities might interest you, visit this site. Simply enter your location in the Search field and browse the resulting list of volunteer prospects. If you’re looking for a particular type of opportunity, you can enter keywords, such as “environment” or “mentoring,” and find activities in your area. You can also choose to search for virtual opportunities, which allow you to extend a helping hand right from your computer.

FreeRice

www.freerice.com

Want to volunteer to fight poverty? Believe it or not, you can donate rice to the hungry by playing educational games online. This site is sponsored by Poverty.com and features games that can help you learn about subjects such as vocabulary, math, art, geography, and grammar. Each time you answer a question correctly, you donate 10 grains of rice to the hungry. Sponsors pay for the rice you win, and the more you play, the more rice is given. The FAQ section explains details of how rice is donated and offers useful information about world hunger.

CharityUSA.com

www.charityUSA.com

This site is part of the GreaterGood Network of Web sites, and it’s a great resource for virtual volunteering and information-gathering. You can learn about several organizations working to

make a difference, including The Hunger Site, The Breast Cancer Site, The Literacy Site, The Animal Rescue Site, and others. Each site features information about its subject and offers ways you can help. You can donate money through each site with “free clicks,” in which the site’s sponsors donate money to charities, or purchase merchandise from the store, with a portion of the purchase price going to charity. So, you can buy birthday gifts and help those in need, all in a few clicks.

Charity Guide

www.charityguide.org

You really want to volunteer, but how can you make a difference with such a busy schedule? This site offers an array of suggestions for ways you can lend a helping hand, even if you only have 15 minutes to spare. To discover ways you can help, start by clicking one of the options under Make A Difference. We started with “In 15 Minutes” and found that we can support the homeless by donating food gift certificates, or we can improve animal welfare by banishing pesticides from our gardens. Other worthy causes include Children’s Issues, Community Development, Environmental Protection, and Health & Safety.

The Humane Society Of The United States

www.hsus.org

Interested in the welfare of animals throughout the United States, but don’t have time to volunteer in your local



animal shelter? This site features a donation option for those of us who want to virtually volunteer to protect and save animals. Donations are used to stop animal cruelty, rescue animals, and keep them in

shelters during disasters. If you donate a minimum of \$25, you will receive the Humane Society’s magazine, *All Animals*.

DoSomething.org

www.dosomething.org

This site targets young people who want to volunteer their time to make a difference in their communities. Based on your interests, the site can match you with opportunities in your area. For example, if you’re passionate about the environment, you can find ways to conserve energy or reduce pollution. The site offers various suggestions for at-home projects or ideas to make a difference. You can even start your own project and submit it for a grant or funding from the site.

The Volunteer Family

www.thevolunteerfamily.org

This site helps families connect with volunteer opportunities so they can bond while working together. The site features information about where to begin, the benefits of volunteering as a family, and volunteering ideas. After registering, you can search the site for volunteer activities for you and your family or a group of friends. You can also help make a difference by donating funds, which will help the site pair families with opportunities or provide children with clothing and toys.

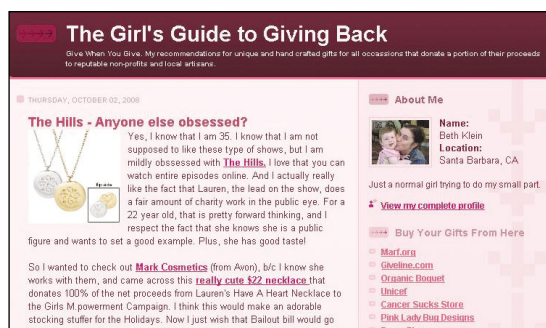
That's News To You

Finding the appropriate online group to match your interests can be a monumental task. So each month, we scour the Internet to bring you the friendliest forums and most interesting bloggers the Web has to offer. This month, we share two blogs that show you how to make a difference right from your computer.

The Girl's Guide To Giving Back

www.girlsguidetogivingback.blogspot.com

"Give when you give" is this blog's motto. Created by Beth Klein, this blog features dozens of posts about products that, when purchased, donate a



portion of the proceeds to nonprofit organizations. For example, by purchasing highlighted school supplies, you will also donate money to

The Leukemia & Lymphoma Society, or purchasing charm bracelets will benefit the American Red Cross. The blog also features a handy list of store links that donate to charities. ■

Charitable Gift Giving Blog: Gifts That Help

www.charitablegiftgiving.com

If you're looking for ways to make giving a part of your everyday life, check out this blog. Each post provides links to charitable sites and volunteer opportunities for new ideas of ways you can help. Use the blog to find online stores that donate money to charities when you buy their products. Purchase a gift for someone you love and help someone else with the money you helped donate. ■

You can lend a helping hand just by buying products from companies that donate a portion of their proceeds to charities.

Share The Wares

Some of the best apples in the online orchard are the free (or free to try) programs available for download. Each month, we feature highlights from our pickings. This month, we show you another way you can help make a difference without leaving the comfort of your home (or your computer).

BOINC

boinc.berkeley.edu

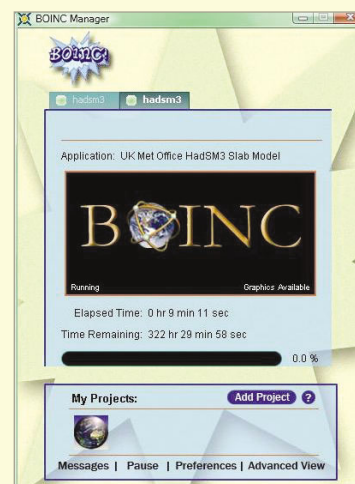
Volunteering comes in many shapes and sizes. You can volunteer by giving your time at a local city mission or animal shelter, collecting cans of food for a food drive, or donating money to a worthy cause. Volunteering can be as easy as installing a special program on your computer that donates unused computer power to scientific research.

Boinc stands for Berkeley Open Infrastructure for Network Computing, and it was created by the University of California Berkeley. Called distributed computing, Boinc enables you to donate your computer's idle power to various causes, such as fighting disease, solving impossible math questions, or predicting climate changes.

When you download the program, you can choose which projects you want to contribute your computer's power to, and as your computer idles, the unused power will help the Boinc project server computers solve various problems.

To download Boinc, visit the site and choose Download at the top of the page. Choose Download Boinc on the next page and save the file to your hard drive. Locate the file and double-click it to start the installation. When you start Boinc for the first time, you will be prompted to attach your Boinc manager to a project. Follow the on-screen directions and choose from the list of projects.

If you want to know more about each project, visit the Boinc site and click Choose Projects at the top of the page. You will need to provide an email address and create a password in order to attach to a project. ■



By contributing your unused computer power, Boinc gives you an easy way to donate to research in medicine, science, and more.

Get Connected

Family-Friendly Social Networking

When people think of social networking, oftentimes they think of popular sites for teens and college students, such as Facebook (www.facebook.com) and MySpace (www.myspace.com). There are many other social networking sites on the Web today designed to appeal to other demographics, however, such as families and adults.

According to the Pew Internet & American Life Project, 57% of adults ages 25 to 34 have a profile on a social network, along with 30% of those ages 35 to 44, 19% of adults ages 45 to 54, 10% of those ages 55 to 64, and 7% of those ages 65 and older. Sites that cater to these age groups can offer families a sense of security because they have more control over who their children's friends are, or they can offer adults a place to gather and establish or reinforce relationships with close family and friends without the added noise of several hundred acquaintances.

Online social networking, as a general definition, happens when people connect to one another via Web sites that let users set up personal

profiles for others to view. Through these profiles, members can message each other, share photos and other types of media, and sometimes play games or join interest groups. No social networking site is exactly the same, and most social networking sites have different applications. LinkedIn (www.linkedin.com), for example, is a Web site that allows people to set up professional profiles for business networking or business management purposes. Twitter (www.twitter.com) is a social networking site that revolves around the concept of Web logs (or blogs). Twitter is considered a microblog, in which users are encouraged to pose short, informal questions and answer other bloggers' questions in a short and informal manner.

A Family Affair

Because of the instances of Internet predators in the news, many parents are reluctant to let their children have personal profiles on the Web. So, there has been an increase of family-friendly social networks to accommodate the families who want to ensure safe online interaction.

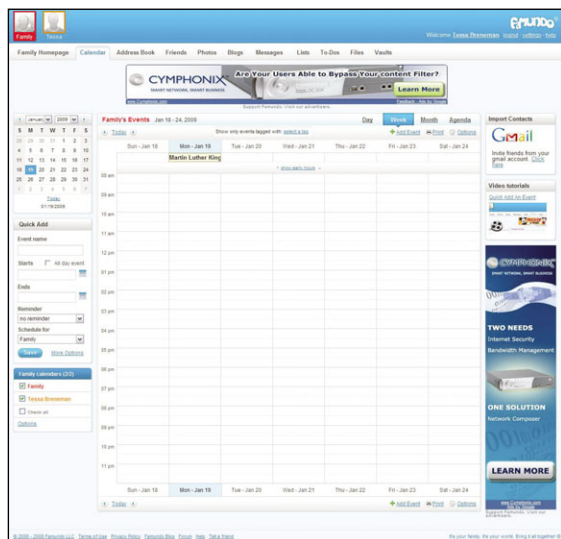
Famundo (www.famundo.com), a social networking site for families,

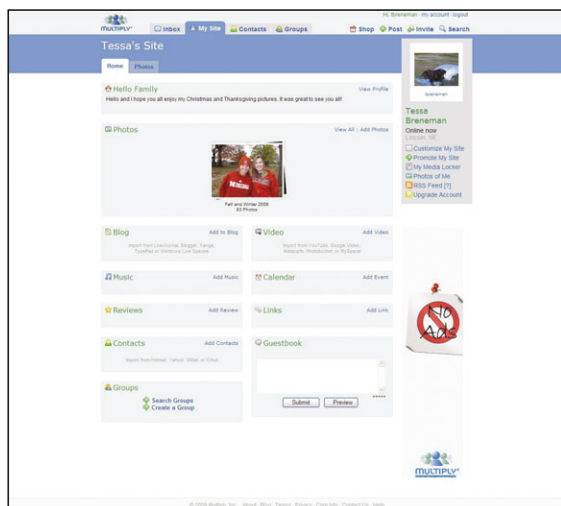
In addition to features such as to-do lists and grocery lists, at Famundo, parents and kids can keep track of their busy schedules through the calendar application.



allows parents to set up a family account for themselves and their children, and then the parents can control who their online family friends are. Parents can opt to be friends with the families of schoolchildren's classmates, grandparents, and other extended family. Famundo not only lets families share photos and create blogs, but it also serves as a family hub where calendars and grocery lists can be kept. Additionally, organizations can also set up profiles to connect with families and post public calendars, along with schedules and events for the organization's employees or volunteers. Free accounts are available at Famundo, but there is also Famundo For Families Plus (\$4.95 per month, \$49 per year).

Richard Kuhlenschmidt, Famundo CEO, believes Famundo is a good site to introduce families to online social networking. "I think social networking is becoming almost mainstream," Kuhlenschmidt says. "I mean, everyone's talking about it, and it's in the media almost every day. But I think families are really concerned about safety and privacy, so I think that's why they look for these alternatives." Kuhlenschmidt also says that families that use social networking sites such as Famundo are less apprehensive to





Multiply lets you keep a blog and share media so your family and close friends can keep up with the activities in your life.

that reconnecting with people you haven't been in touch with for five years. We're about providing a very comfortable forum for sharing your memories."

In addition to these sites, Famster (www.famster.com) and Famiva (www.famiva.com) are other popular family-

oriented social networking sites. Famster members can share photos and videos, include a blog, and even share recipes with friends. Famiva lets you build a family tree and share media with those family members. You can also share stories about relatives and create a blog so your extended family can stay up-to-date with your nuclear family.

Not Just For Kids

For adults in and around the ages of the baby boomer generation, there are social networking sites designed around your particular wants and needs. Eons (www.eons.com) is a social networking site for adults who want to expand their circle of friends.

"A big part of being social on the Web for a lot of people is having a friendship circle to look forward to everyday," says Jeff Taylor, CEO of Eons.

Taylor says as we age, our circle of friendships tends to get smaller for various reasons, and it can be difficult to meet new people through daily activities. At Eons, you can find people with your interests either in your geographic location or outside it. According to Taylor, many Eons members create friendships that prompt them to meet outside of the virtual world and even go on trips. For example, Taylor says one Eons group even took an Alaskan cruise together.

At Eons, there are approximately 4,500 groups that Taylor says can split into the categories of geographic location, dating, passions and interests, and attitude (which encompasses "deep thinkers and tough Q&A forums"). Through these groups, people meet others who share common ground and can build trustworthy friendships by chatting on the phone, privately instant messaging each other, and sharing photos.

In addition to Eons, BOOMj (www.boomj.com) is a social networking site designed for the baby boomer generation and generation Jones. In addition to joining groups and meeting new people, you can sign up to get daily news headlines and gain access to news and information regarding topics that affect adults over the age of 35, such as finance, politics, health, and more. Boomerater (www.boomerater.com) is a network that lets people share information and give advice regarding issues that affect adults.

Find Your Online Home

If you are after more than social online fun, there are plenty of networking sites that apply to specific interests. Social networks are defined by both the applications and the user. For example, Flickr (www.flickr.com) is an online photo-sharing site, and God Space (www.godspace.com) is an online network for believers of all faiths. There is even Chess.com for—you guessed it—avid chess players.

What actually defines whether a Web site is indeed a social networking site is loosely based on the grounds that you can connect to others through the Web site. For that reason, there are plenty of places to socialize online, whether you want to meet new friends, connect with old friends, or engage your family in the online world. ■

BY TESSA WARNER BRENNEMAN

venture to individual profiles on other social networking sites.

Similarly, Multiply (www.multiply.com) is a place for family members or other close friends to connect and share multimedia files, such as videos and photos. The concept behind Multiply revolves around connecting people, but it doubles as an online storage bank for high-resolution and high-definition media. Not only can you store and share media through Multiply, but you can also order prints or gifts, such as calendars and photograph books. You can join Multiply free with some limitations regarding the amount of media you can store and the size of individual files. You can purchase a premium account for \$19.95 per year and have unlimited storage with the ability to store larger files, and your account will be ad-free.

"We're about sharing meaningful memories," says Michael Gersh, vice president of sales and marketing for Multiply. "A lot of activity that goes on [at] some other sites is just about people wanting to have 300 or 400 friends. The other thing that happens is that there is a certain excitement when you reconnect with someone you haven't been in touch with for five or 10 years, but that doesn't mean that you really have anything to talk about or have any sort of a relationship. We're not really about

A Shower Of Tips

I concluded last month's column with a promise: "Coming up next month: April's column will shower you with a potpourri of little-known computer tips, each one a miracle of nature unto itself."

When it came time to put quill to papyrus, and consistent with my long-standing tradition of unfulfilled promises, I decided that rather than a potpourri of little-known computer tips, why not a potpourri of little computer tips, instead? Why not, indeed!

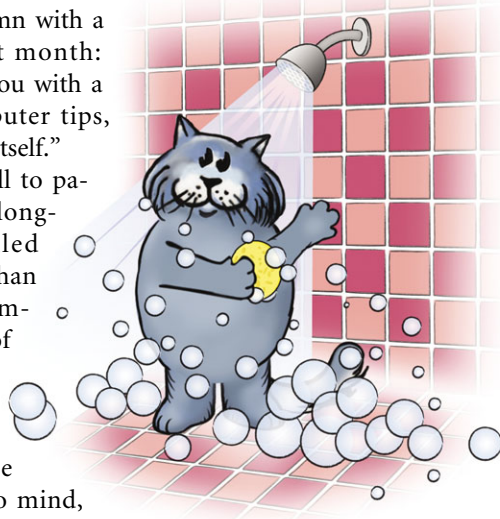
As you read this month's journalistic offering, if a favorite diminutive tip of yours comes to mind, please contact me at MrModem@mrmodem.com and tell me all about it. If your submission is selected for use in a future column, fabulous prizes would normally await. Unfortunately, it's tax time and I'm a little short, but I'm sure the selfless joy of helping others will be reward enough. (Come on, work with me here.) OK, here we go:

Scientific studies conducted by college graduates wearing white lab coats and carrying clipboards reveal that Outlook Express users click the Send/Receive button more than any other button—and we all know how exhausting that is. Relief is mercifully at hand: The next time you want to check for new mail in Outlook Express, try pressing CTRL-M. I'm sure you'll find the milliseconds it saves will be physically invigorating and emotionally rejuvenating.

Internet Explorer 7's add-ons can add features and capabilities, but add-ons can also cause freeze-ups. If that occurs, try running without any add-ons by right-clicking the IE7 icon on your Desktop and then clicking the Start Without Add-ons option. If that eliminates subsequent freeze-ups, you'll know definitively that one of your add-ons is causing the problem. That being the case, click Tools, Manage Add-ons, and Enable Or Disable Add-ons and then disable all add-ons by highlighting each one and selecting the Disable radio button. Enable them one at a time thereafter until you determine which one is the culprit.

Having Thunderbird periodically save a message as a draft provides a safety net, should you accidentally delete a message you're composing. Click Tools, Options, Composition, and the General tab. Make sure Auto Save Every ___ Minutes is checked. Enter the desired frequency for saving (three to five minutes is reasonable) and then click OK.

Every computer on the Internet has a numerical address, called an IP (Internet Protocol) address. If you ever need to provide your IP address to tech support for diagnostic purposes, or you want a unique tattoo for your forehead, you



can quickly determine your IP address by visiting checkip.org.

Working with multiple Word 2003 documents doesn't mean you have to save them one at a time. Instead, press and hold the SHIFT key and then click File and Save All. Pressing the SHIFT key before choosing the File menu magically adds the Save All option. It's almost eerie.

If the persistent pestering of Vista's UAC (User Account Control) pushes you to the brink, and you don't want to be asked if you would like to continue every time you want to make even a little change to your settings, click Start, Control Panel, User Accounts (in Classic View), and Turn User

Account Control On Or Off. Remove the check mark beside Use User Account Control (UAC) To Help Protect Your Computer, click OK, and then restart your computer. Hold your head up high; you did what you had to do.

Use Notepad (click Start, All Programs, Accessories, and Notepad) as a journal or memo pad by inserting the current time and date before each entry. To do this, press F5 anywhere you would like to insert the time and date.

To ensure that any Web site link you click opens in a new window (or tab), right-click the link and choose Open In New Window or Open In New Tab, depending on the browser. When you're finished viewing the page, close that window or tab and you'll be back where you started.

Convert folders into toolbars by dragging a folder to the top, right, or left edge of your monitor, holding it there for a second or two, then releasing it. Windows will instantly create a toolbar containing links to files and subfolders in the folder.

Have you ever encountered a Web page that was difficult to read because light or dark text appears on a light or dark background thanks to some 22-year-old designer with 20/20 night vision? CTRL-A will highlight the page, making it readable.

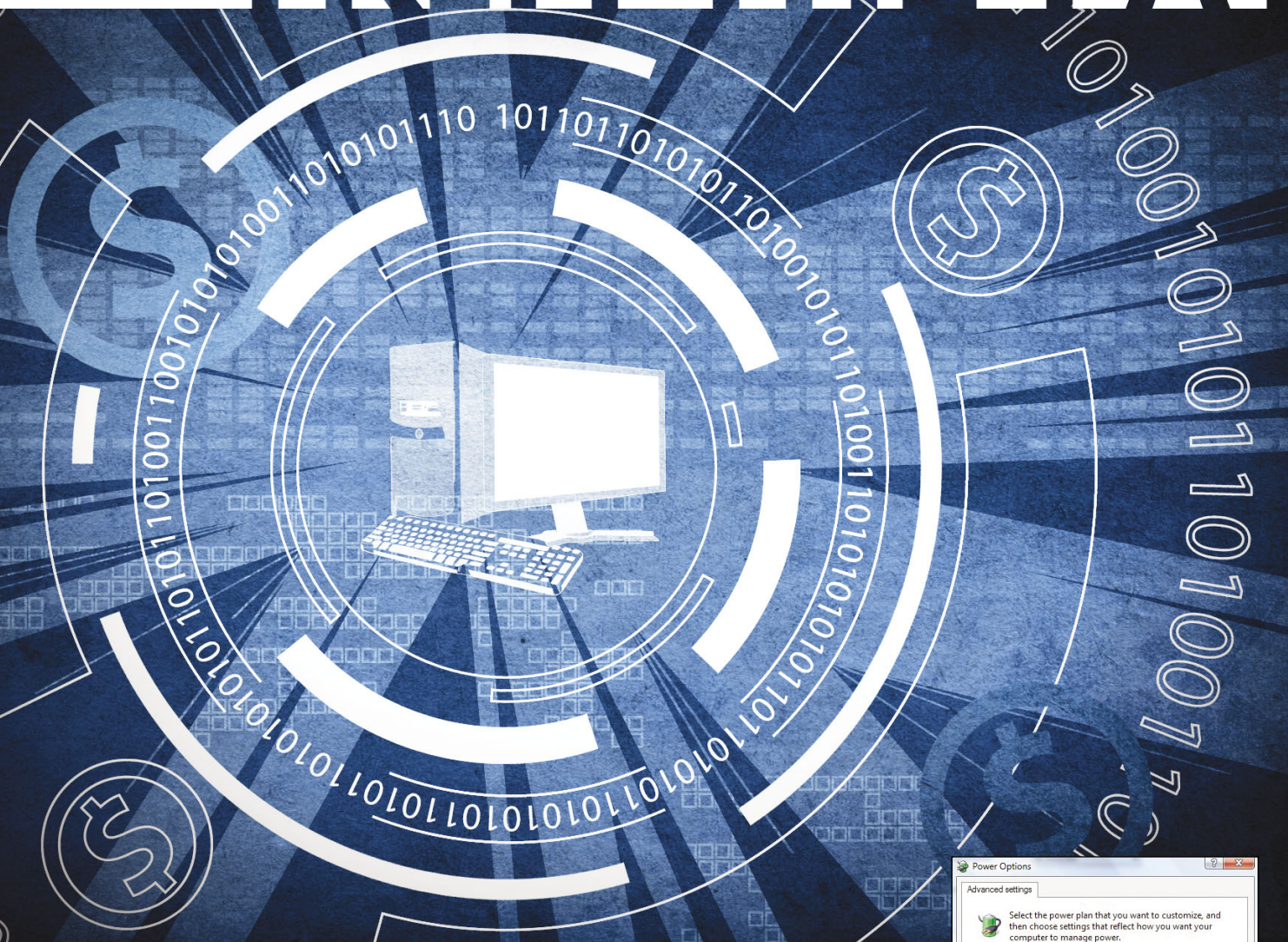
To review previous edits in a lengthy Word document, press CTRL-ALT and then press the Z key repeatedly. It will cycle back through several of your edits without undoing them. Bonus Tip: CTRL-Z will reverse a previous action.

I'll be back next month with a few thoughts about Windows: past, present, and future. ■

BY MR. MODEM

Mr. Modem (Richard Sherman) is an author, syndicated columnist, radio host, and publisher. "Mr. Modem's Weekly Newsletter" provides personal responses to subscribers' computer and Internet questions, plus weekly computing tips, Web site recommendations, virus alerts, hoax warnings, and more. For additional information, visit www.MrModem.com.

TRIM THE FAT

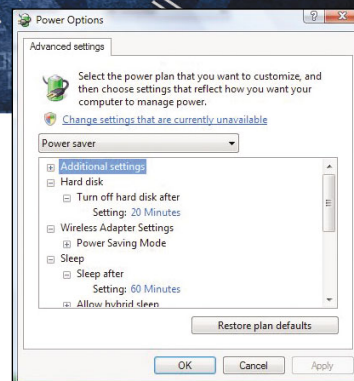


Cutting PC Costs

Computing is an important part of your family members' lives. It's not like cruise vacations—you can't just write computing out of the budget entirely. When trimming computing costs, you should be careful where and how you cut, not just because PCs are an essential part of everyday life, but also because they can be a tremendous source of cost savings. That's why we're here. With a little planning and a little tweaking, you can save a lot with a limited impact. What's more, the articles in this section will help you understand your system better, and you'll have clearer computing

priorities, all while putting (or keeping) a little more money in the bank.

We'll start by helping you find some ways to surf the Web for less. Cheap and "free" (ad-driven) dial-up services aren't the only ways to save when going online, though you may want to consider them if your Internet usage is light and occasional. Hope isn't lost for those of us hooked on broadband speeds, however. From comparison shopping broadband bundles to cruising for free Wi-Fi hotspots, you don't necessarily have to sacrifice speed in order to cash in on savings. You'll be surprised at how many options you



Windows Control Panel's Power Settings can help manage your machine's energy consumption, saving on both electrical bills and long-term maintenance.

have, even with your current ISP (Internet service provider).

Free services, free content, and free software do most of the heavy lifting when it comes to saving money. Our

“Do More With Your PC” segment (see page 55) will highlight all the things you can get out of your PC, for less than you’re paying today from other sources. VoIP (Voice over Internet Protocol), VoWiFi (Voice over Wi-Fi), TV tuning and streaming, and Internet radio can all keep your entertainment cupboard stocked while helping to trim expenses.

The old adage that “you get what you pay for” has rarely been less true than in the area of software. High-quality free software is nothing new, but there may have never been as many available options as there are today. From antivirus software and security packages to multimedia authoring utilities and even productivity office suites, professional-grade software fully compatible with expensive commercial standards abounds at prices that literally can’t be beat. We show you how to identify, find, and acquire the best freebies for cutting expenses while maintaining your standards.

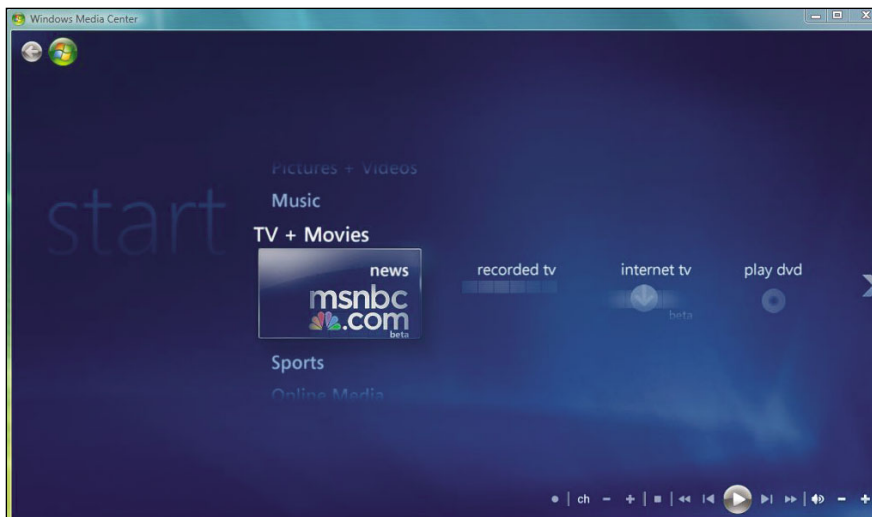
Power management is another potent, if unheralded, way to save on computing expenses. IBM is investing \$1 billion in initiatives to reduce the cost of energy in its data centers. Even if you’re not clustering 20,000 PCs in your basement, introducing small increases in energy efficiency can net

significant savings. First of all, how you use your PC and manage its power consumption can make a big difference in your electrical bill. We’ll also cover the various PC “rest states,” discussing how Standby, Hibernate, and Sleep options can help you achieve lower electrical costs and faster startup times. Then, in “Energy-Efficient PCs” on page 64, we’ll dig deeper into energy-efficient hardware, including ways to squeeze electrical efficiency out of CPUs, power supplies, monitors, and other power-hungry components.

Finally, we’ll provide an introductory primer on technology and taxes. If you’re an IT professional, whether self-employed or salaried, you may be able to find some write-offs amongst those hardware and software purchases. Dedicated home offices can also be a valuable source of tax savings, depending on your job and how you use the space. Of course, you should consult a tax professional for advice specific to your situation, but we’ll help make sure you know the right questions to ask.

It doesn’t matter whether you’re an IT expert or a casual emailer. There are always savings to be found in any situation. We’ll help uncover those hidden gems of frugality. ■

BY GREGORY ANDERSON



PC tools such as Windows Media Center can help put your entertainment budget to cheaper but still dynamic uses.

Surf For Less

Stay Connected While Keeping Costs Down



Do More With Your PC

Same Functionality, Lower Budget



Free Software

Getting More Than You Paid For



On, Off, Or Something In Between

Reduce PC Power Consumption



Manage Windows Power Settings

Your PC Needs Rest, Too



Energy-Efficient PCs

Tips For Green Computing



Write It Off

Tech, Taxes & You



SURE FOR LESS



Stay Connected While Keeping Costs Down

Whether your employer clamped down on the annual raise, or the cost of your kid's school clothes is eating your budget, there are myriad reasons you may want to cut corners this year. Internet access is one service you can trim, but if you do, be prepared for an adjustment. Just like recipes made low-fat through substitutions, cutting back on your Internet diet can definitely affect the flavor of the experience.

Not So Broadband

Broadband speeds have accelerated considerably over the past decade, especially for cable broadband providers. Many ISPs (Internet service providers) now use "booster" software or hardware to give you even faster connections. Daryl Schoolar, a senior analyst with research firm In-Stat's Mobile Internet Group, says fast Internet access is one of the first places to start trimming. "Call up your cable or DSL [Digital Subscriber Line] provider and see if they have a lower

speed, lower-price offering that they do not advertise," says Schoolar.

We checked with Comcast (www.comcast.com), a leading cable broadband provider, and found it advertises two super-high-speed, "PowerBoost" connections—16Mbps (megabits per second) and 12Mbps. However, the sales department also sells an unadvertised, lowest speed of 768Kbps (kilobits per second), which is the minimum speed the Federal Communications Commission considers broadband.

At press time, the 16Mbps and 12Mbps connections cost Comcast users (cable television or digital phone service) \$52.95 or \$42.95 per month, respectively, excluding short-term discounts. The 768Kbps service for current subscribers is only \$24.95 per month. The speed is a fraction of 12Mbps—slow enough to please the turtles in Comcast's ads. Consequently, even if you rarely achieve maximum speeds with a more robust service, a 768Kbps connection will be noticeably slower.

Bundle Or Switch Hit?

If you're not willing to give up that much juice, another possibility is bundling. If you are already a cable subscriber, but you currently use DSL for your broadband service, you may net a tidy savings by dropping your telephone line services and bundling them with your cable. (Savings depend on what you pay for current services.) You may also gain a speed advantage, as DSL is generally slower than cable for the same price. Comcast subscribers can order a "Triple Play," which includes high-definition cable (80 digital channels), digital phone service (unlimited local and long distance), and 12Mbps Internet for \$129.99 per month. At press time, the company was offering a 12-month discount at \$114.99 per month.

Some DSL companies offer a similar combo pack, often bundling Internet with phone and satellite television or wireless services. In general, we found that DSL providers offer the lowest-priced wired broadband, and bundles

increase the savings. For instance, AT&T (www.att.com) also offers low-cost 768Kbps (DSL Lite) connections for \$19.95 a month, but that charge drops to \$14.95 if you have another AT&T account. (All AT&T broadband services are \$5 less per month if you bundle them with another AT&T service.) Even AT&T's lowest-speed broadband service gives you free Wi-Fi access at thousands of hotspots nationwide.

Note that many providers offer a generous rebate for switching your service (the Internet landscape is currently very competitive). Some broadband Internet services also include a monthly subscription to a security suite, which could net you another \$100 or so per year in savings.

Leave The Wires Behind

Depending on where you live, you may have numerous options for wireless Internet that could reduce your outlay for broadband. Clearwire (www.clearwire.com) is one of the most widely deployed wireless Internet providers, with service in over 20 western U.S. cities, plus major cities in 11 other states.

Clearwire terms its service "pre-WiMAX," as the company is deploying a WiMAX network (WiMAX offers greater range than Wi-Fi). However, at press time, the company was offering WiMAX service only in Baltimore, Md. (\$25 per month; no contract required)

and Portland, Ore. (\$20 per month with two-year commitment).

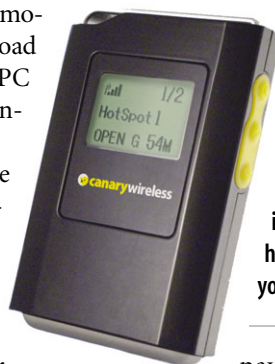
In other covered cities, Clearwire users enjoy wireless Internet on a secure, proprietary wireless (not Wi-Fi) network starting at \$19.99 per month (two-year contract required). Users surf via a stationary modem (up to 2Mbps download speed); use of a plug-in PC card (up to 1.5Mbps download speed) costs extra.

Another way to save money on broadband connectivity is by using Wi-Fi hotspots. Unless you are strategically positioned next to a nearby hotspot (check—you may be surprised) or are stealing bandwidth from your neighbor (not nice), you likely won't receive someone else's Wi-Fi signals in your home. Nevertheless, if you live in a city close to a Wi-Fi hotspot, you can save quite a bit of dough—and surf faster than with restricted broadband—by restraining your access to hotspots. (Considering using free hotspots? See the "Free & Clear" sidebar in this article.)

Numerous companies offer low-cost hotspot service. T-Mobile (www.t-mobile.com) offers its mobile subscribers access to thousands of hotspots for \$9.99 a month, while nonsubscribers can either contract for the hotspot service (\$19.99 per month with one-year contract) or gain access on a

month-to-month basis (\$29.99 monthly). As mentioned, AT&T broadband subscribers, even at the slowest speed, gain free access to Wi-Fi networks.

However, we found a much better deal for penny-pinchers. According to Jeremy Pepper, public relations manager for Boingo (www.boingo.com), the company offers unlimited,



A hotspot detector, such as the Canary Wireless Digital Hotspotter, is a great way to locate Wi-Fi hotspots without having to boot up your PC.

pay-as-you-go access to thousands of hotspots in the United States for \$9.95 per month. Access from a Wi-Fi-enabled mobile device is \$7.95 per month. "A \$9.95 product gets you access to locations throughout the U.S. and Canada, at McDonald's and Starbucks, RV parks, state parks, hotels, and airports that have Wi-Fi for pay," says Pepper.

"Boingo engineered its network so that the worst experience at peak times should be 1.5Mbps upload and download," Pepper says. (Parallel bandwidth is significant for those that upload a lot of files, as many broadband providers offer far lower upload than download speeds.) Boingo extends its reach through partnerships with other Wi-Fi providers, Pepper notes. The user downloads a small applet that alerts him when he is in range of a Boingo or partner network, and he can access any partner service using his Boingo username and password. Pepper admits that partner networks might not offer the same speeds as the Boingo network, but says, "On the networks we roam onto, we have a certain standard—average 1.3Mbps up and down—we try to uphold."

Clearwire offers users secure wireless access in select cities via modem or PC card (shown).



Mobile Mania

If you have mobile broadband, do you really need fixed broadband? If you

already pay for Internet service for your laptop, you should be set to go, especially if you have a USB connector you can use with any PC. Optionally, you can purchase the new Netgear 3G Mobile Broadband Wireless Router (www.netgear.com). An admittedly substantial (\$129.99) purchase converts your mobile broadband USB connector into a combined Wi-Fi hotspot and Ethernet (wired) router.

If you currently pay for Internet service only for your cellular phone, ask your carrier if the phone can act as a modem for your PC. This operation, called modem tethering, generally works over USB cable (fastest) or via Bluetooth connection. (Note that in order to use Bluetooth tethering, your phone must support the Bluetooth modem profile.)

If your phone is 3G-compatible and you live in an area with 3G service, your connection speed via USB cable should be decent. Sprint and Verizon both offer between 400Kbps and 1.4Mbps download speeds with higher bursts based on the phone and coverage area. In the 300 cities where AT&T offers its fastest service, users with compatible phones can connect at speeds up to 1.7Mbps. Outside that network, download speeds can plummet to 75 to 135Kbps. In addition, T-Mobile is just rolling out its 3G (1Mbps downloads) network. Setting up your phone for tethering can be complex and frustrating, but you can find instructions on the Internet by searching for “modem tethering” for your specific carrier.

Another option for Windows Mobile or Symbian users is to turn an Internet-connected mobile phone into a Wi-Fi access point. For instance, with WMWifiRouter (Windows

Mobile; \$29.99; www.wmwifirouter.com) or JoikuSpot (Symbian; free standard Web browsing; www.joiku.com), you can set up a secure connection and broadcast it to any Wi-Fi-enabled PC. Note that both products offer free trials—use them to test the solution.

Broad Strokes

With all of these solutions, there may be caveats that make them less appealing. Keep in mind that not all Wi-Fi access is secure, so robust firewall protection is a must. Also be aware that mobile-based connections may have bandwidth caps. AT&T, for example, caps users to 5GB of bandwidth per month, and prices can become exorbitant after that.

Most importantly, before you switch services, sign up for a free email account and notify friends and family of the change. We like Google's Gmail (www.gmail.com) because it provides more than 7GB of free storage space, and message forwarding to your PC is easy. With Web-based email, if you hopscotch Internet service providers to save money, your email address will go with you. Finally, if hopscotching just isn't your game, you can always keep your broadband and trim fat elsewhere. “Look at your overall disposable income and how much money you are spending on things,” says Schoolar. “You can actually use your broadband to cut other costs, as well.” For ideas on ways you can trim other computing expenses, see the “Dial It Up” sidebar in this article. ■

BY JENNIFER FARWELL



Netgear's new 3G Mobile Broadband Wireless Router turns your existing mobile broadband connection into a Wi-Fi and Ethernet access point.

Free & Clear

If you cannot spend a dime for Internet access, free options are available. Most libraries offer free use of Internet-connected PCs to members on a limited basis, and many offer unlimited free Wi-Fi if you bring your own laptop. Other places you will find free Wi-Fi include coffee shops, restaurants, municipal buildings, and some airports.

Sites such as Wi-Fi FreeSpot (www.wififreespot.com) and OpenWiFISpots (www.openwifi.spots.com) will be invaluable in your quest for free Internet access. (Note that not all sites list all free hotspots, so search several.) A portable Wi-Fi sniffer such as Canary Wireless' Digital Hotspotter (\$49.95; www.canarywireless.com), which can alert you to the presence of hotspots when your PC is not up and running, will also come in handy. ■

Dial It Up

So, you're desperate to save bucks, and traveling for Wi-Fi isn't an option. You can always resort to dial-up, which no longer limits users to the 58Kbps standard of old. Providers such as NetZero (www.netzero.com) have tweaked their dial-up networks to offer download speeds up to five times faster (290Kbps) than vanilla dial-up. That's not speedy, but it's bearable. With NetZero, \$14.95 per month gets you accelerated dial-up, spam protection, Norton AntiVirus, and 2GB of email storage.

Other companies, including AOL, EarthLink, and MSN, also sell dial-up services. However, we found NetZero to offer the best value for the money. If you're really stretched with finances, you can drop back to the Platinum package, with which you'll lose Norton AntiVirus, and revert to slower dial-up for \$9.95 a month. Personally, we'd rather skip a soy latte. ■

DO MORE WITH YOUR PC



Same Functionality, Lower Budget

For years, people have tossed around the words “digital convergence” when discussing how you can watch videos, listen to music, and communicate with others via your PC. But even a few years ago, it seemed far-fetched that a PC could effectively replace traditional sources of entertainment. Whether it’s the growth of technology, a change in consumer habits, or the greater availability of content online, you now have several options—including legal, freely available TV and music online—that can help you use your PC and Internet connection to cut costs. In this article, we’ll show you what you need to save money on communication and entertainment expenses.

Let Your Voice Be Heard

There are two methods for using your Internet connection to make and receive phone calls over the Internet—VoIP (Voice over Internet Protocol) and VoIM (Voice over Instant Messaging). With VoIP, you subscribe to a service

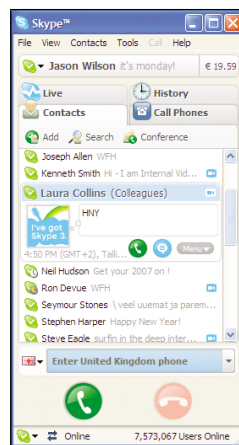
that allows you to make calls using your broadband Internet connection and either a regular phone or via a wireless VoIP handset. With VoIM, you download a software application and connect a microphone to your PC for voice chat. Using either method, your voice is converted into a digital signal that can be transmitted over your Internet connection.

In contrast to landline and cellular phone costs, voice over broadband services often cost significantly less. For instance, popular VoIP and VoIM provider Skype (www.skype.com) allows you to make unlimited calls to landlines and cell phones in the United States and Canada for \$2.95 a month; the ability to receive calls from traditional and cellular phones adds about

another \$5 a month, based on a yearly subscription rate. There’s no cost for Skype-to-Skype calls, video calls, conference calls, and instant messages. Most VoIM providers allow free PC-to-PC calls.

Further, with landline and cellular services, you typically must pay a premium for certain features; whereas, VoIP services often include these features at no additional cost. For example, Vonage (www.vonage.com) includes caller ID, call waiting, voice-mail, call forwarding, call block, and anonymous call block features with all its service plans. Because VoIM phone calls are generally made from a PC, VoIM applications generally lack

premium phone service features, but most support video chat, the ability to



Skype is a VoIP (Voice over Internet Protocol) and VoIM (Voice over Instant Messaging) provider that offers both voice and video chat.

send files (such as images and videos), and instant messaging.

To get started using voice over Internet communications, it's essential that you have a broadband connection, and the faster, the better. Network activity can interrupt voice data, which results in garbled or cut out voices. Fortunately, many routers now offer QoS (Quality of Service) rules that let you give VoIP and VoIM traffic priority over other Internet traffic. For VoIP, you connect an ATA (analog telephone adapter)—which is often provided free (or at an affordable cost) by the VoIP provider—to your regular phone system. Or you can purchase a VoWiFi (Voice over Wireless Fidelity) phone to make phone calls directly over a Wi-Fi connection. The advantage of a VoWiFi phone is that you can make calls over any Wi-Fi network (open or secured) that you can connect to. A VoWiFi phone is ideal if you're also looking to reduce the amount of minutes used on a mobile phone.

If you're looking for a voice alternative to your landline or mobile phone, VoIM may be more suitable than VoIP because you won't need a service provider contract or have to invest in possibly expensive hardware. For VoIM, you'll need a PC with a microphone and headphones or speakers. Generally, most VoIM applications, such as Skype, Yahoo! Messenger (messenger.yahoo.com), and AIM (dashboard.aim.com), are free to download, so you and your friend can chat free when you're both using your PCs. PC-to-PC calls from different VoIM applications may sometimes cost money, so you and your friends may want to download the same VoIM application.

It's important to note that some VoIP services don't offer a connection to 911, while others may not provide 911 locator services. Additionally, if the power goes out or your broadband

connection isn't working, your VoIP or VoIM service won't be available. Thus, you'll need to weigh the benefits and drawbacks before you replace a landline service.

TV For Free

Cable TV can be very expensive. However, your PC offers a number of ways to view your favorite programs free, even at HD (high-definition) quality. Many broadcast networks, including CBS, NBC, ABC, FOX, and The CW, put entire episodes of prime-time programming on the network's Web site. By placing regular programming on the Web site, networks allow you to catch up on the shows you missed, which may reduce the need for you to rent or buy a DVR (digital video recorder). And if you only watch a few prime-time shows, you may no longer need to pay for cable to watch the programs you want.

You can watch full episodes of most of ABC.com's prime-time programming from the network's Web site.

For instance, ABC (abc.go.com) includes free episodes of nearly its entire prime-time lineup, including the popular shows "Lost," "Desperate Housewives," "Grey's Anatomy," and "The Bachelor." You can choose to stream ABC's programming in standard

definition (lower quality but requires less time to download and may play smoother on your computer) or HD quality (higher-quality video that takes more time to download and may appear choppy, depending on the processing power of your computer). Note



With Vonage's VoIP, you'll get a phone adapter that connects to your router and traditional landline phone.

that most networks only save the most recent episodes of a show online.

There are also a number of Web sites that aggregate the shows available online, such as Hulu.com, Fancast.com, and Joost.com, so you can search through a variety of shows from a single Web site. For instance, from Hulu.com, you can watch the recent episodes of NBC's "The Office," as well as classics, such as the original "Battlestar Galactica." In addition to full episodes, Hulu.com includes excerpts and commentary from shows.

If you're a movie buff who subscribes to premium movie channels, you can save money by dropping the premium channels and subscribing to Netflix (www.netflix.com) online service, which allows you to download movies directly to your PC or rent one DVD at a time, for \$8.99 a month. You can also purchase BD (Blu-ray Disc) and digital video players, such as Roku's Digital Video Player (\$99.99; www.roku.com), to watch

the same downloaded content on your TV using your wireless network.

For kids programming, you could visit PBS.org, Nickelodeon.com, or Disney.com. Some cable networks, such as Food Network (www.foodnetwork.com) and the Discovery

Channel (www.discovery.com), also make recent programming available online, so you have a wide variety of content options.

A fast broadband connection is necessary for watching TV online, especially if you want to stream HD content to your PC. To shorten the time it takes to transmit video and audio, Web sites often compress the content, and your PC must decompress the video before it's played on your computer. Your PC offloads most of the decompression duties to your processor, and if you're having trouble playing video, the PC's processor may not have enough power to render the video and audio. For instance, Netflix suggests that you have a 1.5GHz or faster processor to effectively watch the movies you download.

For The Music Fan

If you have yet to try Internet radio, you're missing out. With thousands of free streaming music stations (a quick visit to www.live365.com will give you a good idea of the variety of genres available), you have access to a much greater musical selection than you do on a traditional radio dial. Similar to an AM/FM radio broadcast, most Internet radio stations play a specific genre, but rather than hearing the same Top 40 or classic music rotation, most Internet radio stations mix hits with the forgotten and underground songs of a genre that you wouldn't typically hear on a commercial radio station. For instance, according to Anders Steele from Slacker.com, "Slacker has more than 2 million tracks, and expert DJs who program the over 100 genre stations. You will hear and discover new tracks that you would not hear on a traditional radio station."

Additionally, there are a number of Internet radio stations that let you login, choose the genre you want to listen to, and the free service will select a compatible playlist from its archive of music based on your chosen musical taste. For instance, on Pandora.com, enter an artist, song, or composer, and



Pandora's Web player lets you enter an artist or song you want to hear, and it creates a customized playlist of similar musical taste.

Pandora will deliver a radio station with the same musical characteristics as your selection. To customize the playlist, some online music stations, such as Pandora (www.pandora.com), Slacker (www.slacker.com), and Last.fm (www.last.fm), let you skip and ban the songs you don't want to hear. For instance, Last.fm allows you to pause a song, ban the music you don't want to hear, skip the track, and add a song to a music profile that you can share with friends.

If your local radio stations offer limited selection or you have poor AM/FM reception on the channel you listen to, Internet radio is a free solution to your problem. For instance, if you work in an office building where a radio signal is blocked, you can still listen to music without the need to bring in CDs or a portable music player. We also found that Internet radio provides a number of free options for music genres that you wouldn't otherwise hear on a local

radio station. For example, we found that movie soundtracks, such as those from Slacker's Movie Music/Scores Radio station, provide great background music while working on a PC. If Broadway is more your style, you've got plenty of options. For instance, you could enter the title of your favorite musical into Pandora.com, and it'll generate songs from that musical, as well as similar musicals.

Unlike VoIP, VoIM, and Internet TV, a broadband Internet connection isn't absolutely necessary to stream audio from most Internet radio stations. Additionally, because the content is available on the Web, you can access Internet radio from computers running Windows, Mac OS, and Linux. A number of Internet radio stations also offer applications for your mobile phone, so you can listen to your customized station on the go. Of course, whatever device you listen on, it needs an audio output.

Bring Audio & Video To Your Entertainment Center

If you've invested in a nice HDTV or sound system, you can use it with your PC to watch videos and listen to audio on your PC. Most HDTVs have an HDMI (High-Definition Multimedia Interface) or DVI (Digital Visual Interface) port, and you can connect a DVI cable or DVI-to-HDMI cable to see video from your PC on your HDTV. For audio, you can likely use a 1/8-inch mini stereo-to-RCA cable. ■

BY NATHAN LAKE

But Is It Legitimate?

In the case of Web sites such as Hulu (www.hulu.com), you'll find that some of the content may only be available on the Web site for a short period of time. That's because Hulu.com legally follows the streaming clearances by the content providers, so if a season of your favorite show is no longer on CBS.com, it also won't be available on Hulu.com. In terms of Internet radio, the Webcasters pay royalty rates, and the Webcaster Settlement Act (passed in October 2008) helps ensure that Internet radio stations won't need to add advertising or force you to pay for the service. ■

FREE SOFTWARE



Getting More Than You Paid For

The saying “you get what you pay for” is usually true as it applies to freebies. The free newspaper at the corner probably hasn’t won any Pulitzers, the free gift you get with a purchase is usually something you really don’t want, and fat-free ice cream just doesn’t taste quite right.

However, the old adage doesn’t apply as much to free software these days. The open-source community is widespread and dedicated to producing high-quality products, and individual programmers take a great deal of personal pride in making stellar software.

In what is perhaps a counterintuitive twist, the proliferation of mountains of superb free software is driven not so much by a capitalistic motivation, but rather by personal pride, bragging rights, and the chance to innovate.

Is Free Software Worth It?

Perhaps the hardest part of working with free software is finding the good stuff amidst all the clutter. Some free software is in beta form, meaning that

the creators need people to test it out, find all the bugs, and report back with their findings. Some betas are pretty solid, so you don’t always have problems to deal with, but others may be rife with errors. (Granted, a buggy beta doesn’t necessarily mean that the finished product will have problems; beta testing is how software designers discover flaws they can then fix.)

The advantage that retail software has over free software is that a company can develop a reputation through selling high-quality products, as well as through marketing tactics that beget strong name recognition. Further, retail software tends to be problem-free by the time it hits the market, so you have a much better chance of buying software whose bugs and glitches have already been patched. (Of course, this is not foolproof. Many applications have bugs that are discovered and need to be patched after they hit store shelves.)

For instance, say you need a widget. Where do you go first to find a good one? Company X sells many variations of the widget, and it seems that it has a

solid reputation for making good widgets. Further, when you think of widgets, you think of Company X first. You know it’s not going to sell you poison, because if it did, it’d be out of business in a heartbeat.

But if you go hunting around the Internet for a free version of the widget, you’re not assured of finding anything worthwhile. Perhaps you stumble onto the site of Widgets R Us; you’ve never heard of this company and have no idea if it’s legitimate, let alone if the products are any good.

When in doubt about a free program, perform a simple Google search. If nothing comes up about it, it’s likely very new, fraudulent, or both. Most free applications worth their salt will have been talked about in forums, on blogs, and possibly even on news sites. You can often find more information about a particular application from a site such as www.opensourcewindows.org. Sites such as this have collections of free software, often with descriptions and ratings, so you can tell if the software is good, bad, buggy, or malware.

What You Get (& Don't Get)

When you pay for something, you're also, in a sense, paying for the right to complain, seek a refund, or get customer service—and software is no exception.

One glaring difference between software you purchase and free software is tech support. If you have problems with something you paid for, the seller is likely to offer some form of tech support, more so than makers of free software.



Security software such as Malwarebytes' Anti-Malware is free to download, free of glitches, and very useful.

Although makers of free software commonly offer FAQs, help topics, and user forums on their Web sites, they rarely have human technicians to offer support.

In real life, the lack of direct support becomes an issue of cost vs. benefit. Nathan Colaner, owner of Multiple Choice TestPrep based in Lawrence, Kan., a company that offers tutoring for individuals studying for the SAT and ACT, has discovered this firsthand.

"Given the choice between free software with a difficult interface and no tech support and paying for better, easier-to-use software, I'd much rather forgo the money up front to save my time and energy later," he says. However, there is a limit to how much he would be willing to spend. "If the better software cost a couple hundred dollars, it would be well worth it, but if it's going to be close to, say, \$1,000, I might just take my chances with the free version." (Of course, this scenario is only an issue if the user feels that the

retail software is a better fit for them than the free equivalent.)

Pros & Cons

A free application may perform the same function as the better-known retail version and do it well, but with even high-quality free software, you'll likely have to learn a new interface. For example, OpenOffice.org makes software that mimics the capabilities of Microsoft Office, but it doesn't look the same. Thus, although the software is free, you're forced to learn a new interface.

Compatibility between the free version of a program and the retail version that does the same thing can be problematic. Sometimes, a file created using the free software can't be opened with the retail version, and vice versa, but many good programs ensure that the files are compatible or are saved in a third-party format that can be read by either program.

For all the potential headaches involved with finding and using free software, there are many positives. Unlike retail software, which by nature must have a sales-motivated agenda, the best free software is created by extraordinarily talented people who care about their work, take great pride in its quality, and seek little in return. The resulting products are often of a superior quality—you just have to do a little legwork to find them. ■

BY SETH COLANER

Free Security Software

Check out these free security applications. Among the many free security applications available, we've found these to be good alternatives to retail security software.

AVG Anti-Virus Free Edition

free.avg.com

The free version of AVG offers basic virus, spyware, and adware protection. If you like the software and want more protection, you can upgrade to AVG Anti-Virus Pro (\$34.99) or AVG Internet Security (\$54.99).

Malwarebytes' Anti-Malware

www.malwarebytes.org

Malwarebytes' Anti-Malware is extremely simple to use, and it will detect and remove malware from your computer. For \$24.95, you can add the Realtime Protection Module, which grants you real-time protection and scheduled updating and scanning.

SUPERAntiSpyware Free Edition

www.superantispyware.com

SUPERAntiSpyware can scan hard drives (internal and external), as well as the Registry and remove all manner of malware. You can also customize your scans, although you can't set up automatic scanning.

PC Tools Firewall Plus

www.pctools.com

Firewall Plus works transparently on your system, so you can let it run while you work or play. Rather than eliminating malware, it's designed to keep malware from infecting your system in the first place.

Security Software Updates

To keep your security software as secure as it can be, you need to be vigilant about keeping it up-to-date. Hackers, spammers, and other malware propagators are constantly on the move, coming up with new and improved ways to score information about your computing habits or gain access to your system. As security software companies adapt to block the latest threats, these people come up with *new* threats. And the cycle continues. Virus definitions are the updates that contain ways your software combats the latest batch of malware. Baddies aren't static; your security software shouldn't be, either. ■

ON, OFF, OR SOMETHING IN BETWEEN



Reduce PC Power Consumption

You've finished using your computer for the day. Now what? Do you shut the computer off, power it down into a sleep or standby mode, put the PC into hibernation, or just leave it on? If you're interested in saving energy, the latter is not the answer. Depending on how long you'll be away from the PC, it may be more convenient and as power-efficient for you to use the power-saving features built into Windows. In this article, we'll outline the recommendations from the U.S. DOE (Department of Energy) and EPA (Environmental Protection Agency), as well as the advantages of the different power options in Windows.

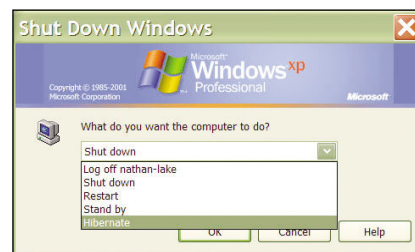
Busting A Few Myths

In the '90s, computer experts often recommended leaving your PC on, because you'd shorten the life span of your hard drive by frequently turning the computer on and off. Although hard drives used to have a limited number of on/off cycles, nearly all

models manufactured within the last 10 years offer 40,000 or more on/off cycles. For instance, Seagate's Barracuda 7200.9 line of internal drives are rated at 50,000 start-stops. Thus, it's unlikely you'll reach the hard drive's cycle limit during your PC's useful life span. On the flip side, the less time you leave a PC on, the longer it will last, because you aren't consistently taxing the internal hardware.

Another popular PC power myth is that turning your PC on uses more energy than leaving it on. According to the EPA, the small surge of power at bootup is equal to the amount of power your PC would use in a few minutes—much smaller than the amount it'd use if you left it running for a long period of time.

Our last common misconception is that screen savers, which prevent image burn-in on CRT (cathode ray-tube) monitors and plasma TVs, also conserve energy. The opposite is true. The EPA estimates that in 2004, \$1 billion was spent on electricity to run screen savers. LCD monitors don't suffer from



The Stand By, Hibernate, or Shut Down options in Windows XP Pro's Shut Down menu let you choose among the different energy-conserving power modes.

burn-in like bulky CRT monitors—making a screen saver unnecessary, outside of its artistic benefits.

What Do Power Experts Suggest?

Factoring in both energy savings and convenience, the DOE suggests you turn off both your computer and monitor if you're not going to use the PC for more than two hours. In fact, if you have a monitor, printer, or other computer peripheral that go into a standby mode, you can save money by connecting all your computer devices to a single power strip. Devices in standby use a small

amount of power, typically between 1 to 10 watts, in order to be ready to respond when needed. By connecting devices to a power strip that you can shut off, such as the Conserve Energy-Saving Surge Protector (\$49.99; www.belkin.com) from Belkin (which features a remote control for cutting power), you can further reduce the power consumed by peripherals in standby mode.

If you don't plan to use your computer within 20 minutes, the DOE suggests that you turn your monitor off and configure the Hibernate or Sleep (Stand By in Windows XP) features included in Windows to automatically power down the computer after a set period of time. Most monitors consume between 25 and 45 watts when on. And with virtually no delay when you turn it back on, it's not an inconvenience to turn your monitor on and off. That being said, the DOE recommends using the automatic standby modes on your computer, rather than shutting the computer down, to save you from reopening all your programs or waiting for your computer. According to Enesta Jones, an EPA spokesperson, "The value of your time will probably be much greater than the amount of electricity you will save by turning off the computer, if you intend to use it again right away."

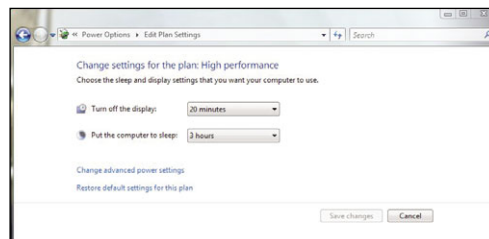
WinXP Power Management Tools

WinXP offers two power-saving options: Stand By and Hibernate. To learn how to power down using the different methods, see "Manage Windows Power Settings" on page 62.

Stand By mode reduces the amount of power used by the hardware on your PC, including slowing down the processor and cutting the power to your hard drive and monitor. The data from your open applications is stored in your PC's RAM, which allows your computer to return within seconds to the state you left it.

Although Stand By is a low power feature, your computer is still using energy

to keep itself ready when you move your mouse, press a key on your keyboard, or push the Power button. With Hibernate, all of the hardware inside your computer is powered down, and Windows stores your open files on your hard drive rather than the RAM. Starting up from Hibernate will take longer than Stand By, because WinXP must start your



In the Edit Plan Settings window, you can configure the amount of idle time before Vista automatically turns off your display and puts your computer to sleep.

hardware and load the applications it stored in your hard drive. Load times are usually around 30 seconds, which means it's longer than Stand By and shorter than starting the computer. In terms of power usage, Hibernate uses around the same amount of power as shutting down your PC. The advantage to shutting down and restarting is that you can reload WinXP, which helps to avoid operating system errors.

Vista Power Management Tools

Microsoft renamed Stand By mode to Sleep, and other than the name change, the primary difference is that Vista's Sleep mode awakens the computer faster than WinXP's Stand By

mode. Additionally, Windows Vista introduced a new Power button layout. When you click Start, you can select the arrow on the far, lower-right side of the menu to select between Vista's power down options. You can also configure the Start menu's Power button to shut down via the method you use the most.

By default, clicking the Power button puts your PC into Sleep mode. To change the Power button's function, click Start, Control Panel, System And Maintenance, and Power Options. Select the Change Plan Settings link under your current power plan and click Change Advanced Power Settings. Click the plus sign (+) next to Power Buttons And Lid, select Start Menu Power Button, and click the Setting field to choose the power down mode you want. Click Apply and OK. There's also a Lock button located in between the Power button and arrow, which is ideal when you want to leave the computer on and password-protect your account.

Powerful Ideas

It's up to you to configure Windows' automatic power-down options. In WinXP, click Start, Control Panel, Performance And Maintenance, and Power Options. In Vista, click Start, System And Maintenance, Power Options, and click the Change Plan Settings link. Once you choose the type of automatic shut down process you want to use, you're on your way to saving money, as well as the environment. ■

BY NATHAN LAKE

Expected Energy Consumption

Based on Energy Star's Savings Calculator, here is an estimate of what you might pay in yearly electrical costs for a PC that runs for an average of 16 hours a week.

Power Settings	Yearly PC Electrical Cost
Power management settings off/PC left on at night.	\$93
Power management settings off/PC turned off at night	\$30
Power management settings on/PC left on at night	\$17
Power management settings on/PC turned off at night	\$15

MANAGE WINDOWS POWER SETTINGS



Your PC Needs Rest, Too

Properly utilizing one of your operating system's power-saving features will reduce your energy consumption costs overall. Windows Vista and Windows XP incorporate multiple power-saving modes so you can appropriately balance energy consumption between Windows activities and the PC's resting states. Below, we'll discuss how these rest modes differ, where to locate them, and how you can personalize settings to accommodate your power-saving preferences.

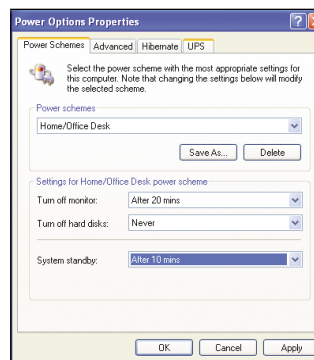
Standby Mode

What do you do when you're standing by? You're waiting for something to take place. You can loosely apply this concept to WinXP's Standby mode. Your operating system shuts down the energy-consuming components (such as the CPU and hard drive), save for the RAM, until it's prompted to return to its normal state. In other words, your PC lies dormant until you interact with it again.

Activating Standby mode in Windows XP Home doesn't require much effort (be aware that there are minor instructional differences for WinXP Pro). Click Start and locate the Turn Off Computer icon. It will appear as a circle with a line in the center, all of which is surrounded by a box. Click it, and Windows will provide three options: Stand By, Turn

Off, or Restart. Select Stand By, indicated by a circle that includes a line puncturing the top half.

WinXP will inform you that it's preparing to enter Standby; expect your monitor to go completely dark. To reawaken your PC, press the Power button, type on the keyboard, or reposition your mouse. All of your programs, applications, and documents should be in the same condition as you left them.



Use Power Options Properties to adjust your settings for various power schemes in Windows XP. Select a time in System Standby to automatically start Standby mode.

It's always wise to save your data before you walk away from your PC, so be sure to do so prior to initiating Standby (as well as the following two modes).

In addition to activating Standby using the aforementioned steps, you have the option to change your PC's settings in order to automatically or manually put your computer into Standby. Open the Control

Panel, click Performance And Maintenance, and then click Power Options. In the Power Schemes tab, Home/Office Desk should already be selected in the drop-down menu. If you want to maintain this setting, direct your attention to Setting For Home/Office Desk Power Scheme. Next, go to System Standby, click the drop-down menu, and choose a standard time to automatically start Standby, such as

After 5 Mins or After 2 Hours. Lastly, click Apply and OK to save the changes.

To manually put your PC in Standby mode (essentially turning the power button into a standby switch), select the Advanced tab in Power Options Properties. In the Power Buttons section, click the drop-down menu under When I Press The Power Button On My Computer; select Stand By, click Apply, and then OK.

Hibernation

Hibernation mode is available in WinXP. In this mode, your operating system saves your active programs to the hard drive and then shuts down completely. You will need to return to Power Options Properties (Start, Control Panel, Performance And Maintenance, Power Options) to set up Hibernation in WinXP. Click the Hibernate Tab; under the Hibernate section, select the Enable Hibernation box. Now, click Apply and then OK. To automatically set Hibernation, go to the Power Schemes tab in Power Options Properties and select a time next to System Hibernates. Click Apply and then OK to close Power Options Properties. Depending on how much RAM is in your system, your PC should take no more than 30 seconds to come out of Hibernation mode.

The Hibernation power-saving mode is also available in Vista. On the whole, it's been revamped as a feature now incorporated into Vista's Sleep mode. To understand this difference, continue reading our explanation of Sleep state, below.

Sleep

Vista's Sleep mode is essentially the combination of Standby and Hibernation. Although your system may look like it's completely shut off because the monitor goes dark, your PC has actually shifted to a mode that minimizes the monitor's power consumption in addition to saving

internal energy. All of your open programs, such as Word, Internet Explorer, and iTunes will be saved in their current state, so when you "wake up" your Desktop, you will not have to start them afresh. Click Start and move your mouse pointer so that it hovers over the arrow located on the bottom-right corner of the Start menu. Next, click Sleep; your PC will immediately enter Sleep mode, and your monitor will be completely black. To return to a normal operating state, press any key on your keyboard or move your mouse. The Vista Login screen will appear; click your user account name, and you'll find the Desktop just as you left it.

Vista lets you edit your power plan options by choosing your preferred sleep and display settings. To modify your plan, click Start, open the Control Panel, and click System And Maintenance. Under Power Options, select Change When The Computer Sleeps. You can program the monitor to turn off anytime between one minute and five hours by selecting the drop-down menu next to Turn Off The Display. Or, set your PC to go to sleep after so many minutes or hours by clicking the drop-down menu to the right of Put The Computer To Sleep.

If you would rather edit your system-wide power settings—which include Sleep commands—click Change Advanced Power Settings. In the Power Options window, click the arrow next to your current advanced setting—you should see a total of three options: Balanced, High Performance, and Power Saver. Power Saver mode will set your Sleep mode at 60 minutes. Click OK to close out of Power Options; if you've changed power option settings in the Control Panel, click Save Changes.

Take A Break

Windows' rest states are designed to streamline switching between your PC's on and off states. They save you from having to shut down after ending

a session and waiting through the bootup process each time you want to perform a task on your PC. Standby, Hibernation, and Sleep are characterized by slight variations, but each mode saves time and power, all while protecting your work. ■

BY JOANNA SAFFORD

Vista Power Plans

In addition to Sleep mode, Windows Vista includes customizable power plan options. Specifically, the three preferred plans feature Balance, Power Saver, and High Performance. They reflect three types of personalized Sleep modes. A Balanced power plan mixes equal parts energy savings and performance. Power Saver emphasizes conserving energy over maintaining peak performance. Conversely, High Performance provides the highest performance settings, but sacrifices more energy.

You can locate these power preferences by clicking Start, Control Panel, System And Maintenance, and Power Options. In selecting a preferred plan, Vista automatically changes your power settings. If you want to adjust these, click Change Plan Settings under the desired plan.

Creating a Custom Plan is an alternative to Vista's default plans. On the left side of the Power Options window, click Create A Power Plan. To begin, you'll choose one of the preferred plans that is most similar to the new plan you want to customize. Enter a name for the plan in the Plan Name box and click Next. In the subsequent window, you will adjust the settings for turning off the display and putting the PC to sleep. Click Create to save your changes and activate your new plan. Vista takes you back to the Power Options window where you should see your newly created power plan under Preferred Plans. ■

ENERGY-EFFICIENT PCS



Tips For Green Computing

The world is going green, and PCs are no exception.

That computer tower purring away under your desk, along with the monitor sitting on your desk, burn more electricity than you may think when they're working full swing. They also continually consume electricity when you leave them on, especially if special power-saving modes are not enabled or if you use older equipment such as CRT (cathode-ray tube) monitors instead of LCDs. According to the U.S. PC Energy Report 2007 commissioned by Alliance To Save Energy and conducted by Harris Labs, leaving a typical PC on overnight wastes an average of \$55.13 worth of power per year, and that figure climbs for those with powerful PCs and large monitors.

Reducing energy consumption requires using existing PCs more efficiently (see "Manage Windows Power Settings" on page 62) and also carefully considering components when purchasing or upgrading a PC so



AMD's Sempron CPUs require far less energy than do the company's high-end processors.

that you choose energy-efficient ones whenever possible.

Buying A Green PC

One of the best ways to make sure you'll use the minimum amount of power possible is to focus on laptop computers instead of desktops when shopping for new hardware. Laptop designers are always looking for ways to maximize battery life, and chip manufacturers respond by creating CPUs, video chips, and other hardware

that consumes much less energy than the hardware designed for desktop systems.

Individual Components

If you aren't trying to find a complete system, or if you are comparing complete systems that aren't necessarily designed to be energy-efficient, it can literally pay to know about the power differences among the separate components that comprise a PC. Only a few of them make a big difference in terms of overall power consumption, making comparisons much easier.

CPUs. When it comes to energy efficiency in computers, most users should focus on the CPU. Consumption varies depending on how much of the processor's capabilities are being utilized and also on the type of CPU, as some are more energy-efficient than others. For example, the AMD Phenom X4 Quad-Core 9950 runs at 2.6GHz and requires 140W (watts) of power. Intel's

flagship Core i7-965 Extreme Edition runs at 3.2GHz and requires 130W of power. Compare that to the AMD Athlon X2 Dual-Core 3800+, which runs at 2GHz and requires 35W of power, or the Intel Core 2 Duo E8600, which runs at 3.33GHz and requires 65W of power.

Notebook processors can be even more efficient. For example, Intel's Core 2 Duo U7700 designed for laptops runs at 1.33GHz and requires only 10W of power, and AMD's Sempron Processor for Ultrathin Notebooks runs at 1GHz but requires only 8W of power. Taking this to the extreme, Intel's Atom Z530 designed for netbooks runs at 1.6GHz and requires only 2W of power.

Another feature to look for is power stepping, in which the CPU runs at a lower speed (and, therefore, requires less power) when demand for processor power is low. For example, CPUs with Intel's SpeedStep technology run at reduced speed when only a few applications are running or when a laptop runs on battery power.

One thing to keep in mind when comparing CPUs is that newer, faster models aren't necessarily more power-hungry than older, slower products. CPU manufacturers routinely upgrade their production capabilities so that CPUs can use smaller transistors that require less energy to operate, so it sometimes happens that CPUs with the same name and speed specifications require different amounts of energy because they were manufactured using different processes. Visit www.intel.com or www.amd.com and use the comparison features to check the stats carefully when comparing CPUs.

Video cards. Computers use either integrated video chips or discrete video cards to output video signals to the monitor. Integrated chips generally offer barebones features, borrow memory from the computer's main memory pool to process video, and sometimes have problems rendering the 3D

Power supplies, such as this Corsair HX620W (www.corsair.com), that have 80 PLUS certification are more efficient than uncertified power supplies.



graphics used in many modern games. The upside is that integrated video chips tend to be power-efficient, and many shed so little excess energy as heat that they don't need any special heatsinks or other cooling devices to prevent damage to the video processor.

Discrete video cards have their own internal memory banks so they don't have to steal memory from the rest of the system, are installed in a video slot so they can be easily replaced as newer models become available, and tend to have extremely powerful processors that can render amazing 3D graphics. Unfortunately, all of this functionality comes at a price, as discrete video cards—particularly cards designed for gaming—draw a lot of power and waste so much of that energy that they would melt if fans and other cooling techniques were not used to keep them frosty.

Often, it is possible to achieve a balance of power and performance by buying a discrete video card that isn't

cutting-edge and that runs fine when only passive cooling (metal heatsinks instead of active fans) is used.

No matter what video card you choose, power consumption increases dramatically when 3D games and applications are running, so stay in 2D mode (the Windows Desktop) as much as possible to conserve energy.

Hard drives. Hard drives run almost constantly when your computer is in use, and the faster the drive, the more energy it likely uses. If you want to save energy, get a drive that spins at 5,600rpm or 7,200rpm instead of 10,000rpm. Power requirements of drives that spin at high speeds can be offset by technology, such as that incorporated in Western Digital's Caviar Green Drives (www.wdc.com), which allow for 16MB or 32MB of cache but still use up to 40% less energy than a comparable drive because of integrated algorithms that reduce the speed of the drive when maximum performance is not necessary.

SSDs (solid-state drives) are another type of mass storage. They are useful in laptops because they have no moving parts and are therefore sturdier than drives that use spinning data platters, but they don't necessarily use less energy.

SSDs utilize power much differently than traditional drives do, so some consume more power than their traditional counterparts when used in the same way, and some use less, but at this point any overall power savings from using SSDs is likely to be insignificant. This will change as the technology matures, but don't assume that by installing an SSD your laptop will use a lot less battery power.



If you buy a fast hard drive with a lot of cache memory, make sure it has extra power-saving features such as those found in Western Digital's Caviar Green drives.

Displays. One of the best ways to save energy is to ditch old CRT monitors and replace them with LCD models. Most LCDs use fluorescent backlights, which are energy-efficient, and some newer LCDs use LEDs (light-emitting diodes) as a backlight, which are even better in terms of energy consumption. When comparing monitors that use the same backlight technology, remember that larger models consume more power.

Another feature to look for when comparing monitors is Energy Star compliance. This designation from the U.S. Department of Energy indicates that a display uses less than a typical display's power when turned on (depending on the resolution the screen supports), consumes 2W or less when placed in Sleep mode, and consumes 1W or less when turned off. You can get a complete list of Energy Star-qualified monitors at www.energystar.gov.

Power supply units. The PSU can be one of the least-efficient components of a PC, and because it is always in use, buying an efficient PSU can save a lot of money and energy in the long run. Efficiency in PSUs is measured by comparing the amount of energy they consume relative to the amount of energy they output to the PC's other components. For example, if the components require 300W and the PSU is 90% efficient, it draws 333 total watts, generating 33W of wasted heat energy. A PSU that is 50% efficient needs to draw 600 total watts to deliver the same 300W of power to the components, with the remaining 300W wasted as heat energy.

One thing to look for when comparing power supplies is 80 PLUS certification. This seal of approval means that the power supply wastes 20% or less of the electricity flowing through it even when it is running at 100% of its rated power load. There are currently four levels of 80 PLUS certification awarded depending on how efficient the PSU is,

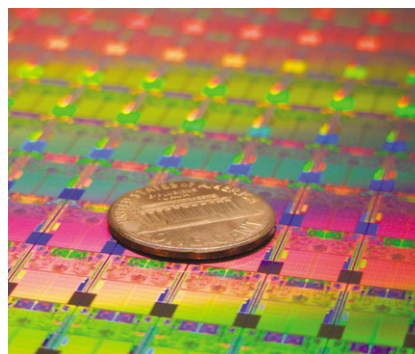
as detailed in the "80 PLUS Efficiency Levels" chart.

Finally, ignore the overall power rating of a PSU when comparison shopping. An inefficient 300W PSU costs much more money in the long run than a 1,200W model with 80 PLUS Gold rating costs.

Watch The Heat

Inefficient components generate a lot of wasted heat energy, and that makes the PC even more energy-inefficient because the fans must work much harder than usual to force all of that hot air out of the case. Whenever possible, place your PC in a location where cool air can enter the front of the case, and keep the back well-ventilated

Smaller manufacturing processes allow for smaller chips that burn less energy, such as these Intel cores that use a 45-nanometer production process.



so that hot air can easily be forced out of the rear of the case. Check inside the case to see if any components or cables are in the path of any of the fans and tie cables or relocate components if necessary to avoid any blockages in the airflow. Whatever you do, don't remove the top or side of the case thinking that it will improve airflow. Fans are designed to whisk air through the case and out the back, and they can't do their jobs if they aren't in a sealed environment. ■

BY TRACY BAKER

Tech Support

Energy efficiency is a great way to cut PC costs, but you can also significantly cut down on tech support costs by utilizing *Smart Computing's* SmartPeople Computer Support service (www.smartcomputing.com/techsupport). All subscribers get free access, and if the extensive articles featured at the Web site don't solve your problems, you can post questions to the reader-response Q&A Board, email the SmartPeople staff, or even call toll-free 8 a.m. to 8 p.m. (CST), Monday through Friday, and talk to a live member of our staff who will be happy to assist you. ■

80 PLUS Efficiency Levels

The 80 PLUS program is an initiative that promotes the integration of energy-efficient PSUs (power supply units) into desktop computers. For more information about the 80 PLUS program, visit www.80plus.org.

Percent Of Rated Load	20%	50%	100%
80 PLUS	20% or less power wasted	20% or less power wasted	20% or less power wasted
80 PLUS Bronze	18% or less power wasted	15% or less power wasted	18% or less power wasted
80 PLUS Silver	15% or less power wasted	12% or less power wasted	15% or less power wasted
80 PLUS Gold	13% or less power wasted	10% or less power wasted	13% or less power wasted

WRITE IT OFF



Tech, Taxes & You

We're all looking for ways to make the most of our money, especially in these tough economic times. The good news is that after you've cut your PC expenses as much as possible, if you use these items in a home-based business, you can save even more money by deducting computing and home office equipment costs on your tax returns.

Taking write-offs for equipment such as PCs, printers, computer peripherals, and more is far from straightforward, however. Keep in mind that although we aren't tax professionals (and we highly recommend you talk to your own tax professional about your particular situation), we have spoken with some of the experts. Here are their top tips for writing off computing and other home office equipment.

Deduct as much as you can as soon as you can—usually. For major home office equipment, a deduction is typically spread out over a period of years, and for computers, it is usually a five-year period. "Generally, you want to write off as much as possible up-front to maximize your immediate tax benefit," says Bob Meighan, vice president of TurboTax. "However, if you convert the asset to personal use before its useful life is over, you may lose some of that benefit." Keep in mind also that the federal Economic Stimulus Act of 2008, which brought many of us bonus checks last year, includes provisions

allowing for greater depreciation earlier on in the life of certain assets.

Delay deductions in certain situations. There's a notable exception to the previous tip. If you anticipate your next year will be much more profitable than the last, you may want to claim a deduction later rather than sooner, says Jackie Perlman, a research analyst at The Tax Institute at H&R Block. Specifically, you can skip the large first-year deduction and instead claim a larger depreciation deduction the second year. Suppose you've landed a big contract at year's end, and you expect to have significantly more taxable income next year. In that case, it may benefit you to lower your adjusted gross income in the second year more than it would in the first.

Place your equipment into service before the end of the year. It isn't necessary to have tendered payment for equipment before you can write it off. "A deduction is allowable the year equipment is placed into service, even though it may not have been paid off. But it must be in use physically," says Chris Branagan, a CPA with Kittell Branagan & Sargent in St. Albans, Vt. So, for example, if you acquired home office equipment in December 2008 but didn't pay the bill until January 2009, as long as you placed the equipment into service in December, you're allowed to take a deduction on your 2008 taxes.

Remember the extras. It's easy to look around your home office and see

some of the write-offs—the computer, fax machine, printer, office phone, etc. But software and services associated with this equipment are also deductible. Don't forget to include the following in your list of assets: online backup fees, Internet access costs, virus protection subscriptions, accounting software used in your business, tax preparation software, and software specific to running your business.

Keep excellent records. If you use an item for both business and personal use, the IRS requires you to keep a log detailing when the item was used and for what purpose. This includes phones, cell phones, vehicles, and computing equipment. Not only will this help you file a more accurate tax return—the amount you can deduct for this equipment will depend upon the percentage of use for business purposes—but if you're ever audited, it will also save you time and hassles.

One Last Tip

These are just a few suggestions for writing off computing and home office equipment. Remember that the law is constantly being updated, which leads us to our last and most important tip: Be sure your tax preparation person or software keeps on top of deduction laws and regulations. ■

BY HEIDI V. ANDERSON

Check Out The Tech Support Center

The Tech Support Center at SmartComputing.com has always been the place to find helpful information for all of your computing troubles.

Check out the Networking & Communications area to find out how to install and configure your home network properly. You'll find out how to set up your wireless network, fix wireless connection problems, and much more. Be sure to take a look at the Backups & Data Recovery section, as well. This area contains articles that explain the ins and outs of creating system backups, recovering lost data, and other backup basics. Check out these articles at SmartComputing.com's Tech Support Center today!

- 1 Go to SmartComputing.com and click the Tech Support Center link on the home page.
- 2 Click Backups & Data Recovery or Networking & Communications.
- 3 Click View ALL Backup & Data Recovery Articles or View ALL Networking & Communications Articles to view articles in those areas.

Be sure to store all of your articles and information in your Personal Library to keep for future reference. Simply log in, and when you find an article you would like to keep, click the Add To My Personal Library link at the top of the page. Create as many folders as you like to keep your information organized and accessible.

Tech Support Center

Tech Support Center

- Error Messages
- Solutions Knowledgebase
- Basic Troubleshooting Articles
- Security & Privacy
- How To Get Rid Of
- Backups & Data Recovery**
- Preventive & Regular Maintenance
- Networking & Communications**
- Articles On How To Install ... Just About Anything
- Driver Education
- Other Helpful Tech Support Tools

Backups & Data Recovery

Every disk drive in existence will stop working one day; count on it. If a drive failure would be a major disaster in your life - or even just a terrible nuisance - move forward and backup.

Sample Articles:

- [Backup Basics](#)
- [Create System Backups](#)
- [Data Recovery Basics](#)
- [Create Emergency Boot Disks](#)

[View ALL Backup & Data Recovery Articles](#)



Cell Phone First

Thirty six years ago this month, Martin Cooper made the first public cell phone call. It would be ten years before the first cell phone made it to the general consumer market.



Video On The Web

According to ComScore, in April 2008, U.S. Internet users viewed a total of 11 billion Web videos. More than 4 billion of those were viewed on Google sites (mostly YouTube [www.youtube.com]).

Feeling Foolish

April Fools' Day brings a lot of pranks on the Web. Last year, security company F-Secure (www.f-secure.com) posted a notice about a bogus computer virus that supposedly put money into victims' bank accounts.



Smart Computing's Fun Site Of The Day

Save The Words

If you have an affinity for obscure words, this is just the site for you. At Save The Words, you'll find a collection of words that have fallen out of regular use. Click one of the illustrated words, and you'll find its definition and an offer to "adopt" the word. You can sign up to receive A-Word-A-Day emails, too, or you can just browse for new words with which to confuse your neighbors.

www.savethewords.org



Browsers

Quick Studies
How-To

Track Downloads Through Your Browser

Downloads

Beginner

It should be simple, but downloading files can sometimes seem pretty frustrating. Dealing with slow connections and searching for files once they've finally made it to your hard drive are probably the most frequent causes of the downloading blues.

Built-in browser download managers can help you keep track of what you've downloaded and where the files ended up. Some can even temporarily pause a long download and resume it later, maybe when you can devote more bandwidth to the task. We took a look at Mozilla

Firefox's Download Manager relatively recently (see page 66 in the June 2008 issue); this month, we'll see how Internet Explorer, Apple Safari, and the new kid on the block, Google Chrome, differ from Firefox in wrangling bytes from the Internet to your own PC.

Apple Safari. Like Firefox, Safari uses a small, separate window to list downloads

present and past. When you click a link to download a file in Safari, a Downloads window automatically appears to show you the status of the download. You can also pull up the Downloads window by pressing CTRL-ALT-L. The Downloads window contains a list of any files being transferred at that moment and also a list of other files recently downloaded.

Open the Download window in the midst of a download, and you'll see the status of any downloads in progress. To pause a download, click the X near the file name. Click the arrow icon later to continue the download.

If you right-click an entry in the Download window, you'll see a small context menu that lets you open the file, show the file's containing folder, copy the online address of the file to the Clipboard (useful if you want to redownload the file for some reason), or remove that file from the list. A Clear button at the bottom of the Download window removes all entries from the list.

Google Chrome. Google's new Chrome browser also includes a download manager-type screen. Chrome's download manager does not appear in its own, small pop-up window, however. Instead,

the download manager takes up an entire screen in a new tab. To view it, click the tool icon in the upper-right corner and choose Downloads (or press CTRL-J).

At the top of the Downloads tab is a Search bar you can use to find files amongst the many you have saved. Below the Search field is a list of all the files you've downloaded. Each file name is hyperlinked, so that if you click a file, it will open or run.

Below each file name is the Internet address where you obtained the file. A Show In Folder link opens the Downloads folder so that you can see the actual file on your computer. Like Safari, options next to downloads in progress let you pause or cancel the transfer. Any downloads you pause or cancel remain in the list, and you'll see that status information next to the file name.

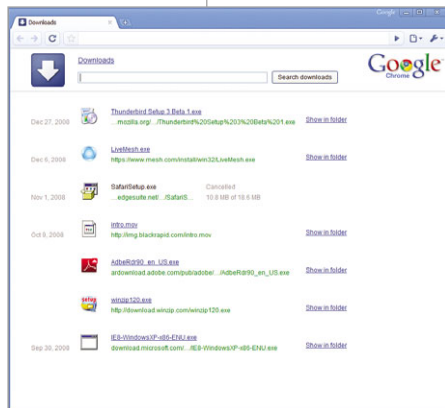
Microsoft Internet Explorer. IE lacks the kind of download manager we see in Firefox, Safari, and Chrome. In IE, you'll see the standard Download box that tells you that a download is underway. While IE downloads the file, uncheck the Close This Window When Download Completes checkbox. When the download is complete, click the Open Folder button. A new window will display the folder to which IE downloaded your file. Sadly, IE offers no easy way of looking at recent downloads that were downloaded to a different folder or of locating "lost" downloads. IE also lacks the pause/resume feature that seems to be standard in many other browsers' download managers.

Typically, IE saves downloaded files to the Downloads folder under your username in the Users folder. If you aren't sure where that is, click Start and then click your username. If you don't see your file there, type the file name (or as much of it as you can remember) into the Start Search box.

Transfer Tips

While they go about it a little differently, most of the major browsers—except for Internet Explorer—have download management tools that let you pause, resume, and track download transfers, as well as find the files once the download is complete. Give these little tools a try, and you should be able to forget about at least one of life's small frustrations. ■

BY ALAN PHELPS



Google Chrome's Downloads page provides a simple, clean list of files that you have downloaded and where you can find them on your hard drive.

Online

Meet Halfway With Online Mapping

Maps

Beginner

Whether you're meeting friends after work for a movie or a colleague for lunch, it can be difficult to locate a setting that's convenient for you both. Instead of forcing one party to compromise, turn to the Internet for a little assistance.

The Web provides at least four ways to figure out the best, centrally located meeting place for two or more people scattered around a city, region, or even the world. Input the locations of everyone who wants to get together, specify a few other parameters, and these sites will use tools such as Google Maps (maps.google.com) to find a decent gathering spot where everyone travels about the same amount. Finding an equidistant locale isn't on par with solving any of life's greatest dilemmas, but it can make planning a get-together just a bit easier.

Meet In Between

This site's tagline is "I'm not drivin' all the way out there!" It clearly shows you where its sympathies lie: With the one who always has to drive the farthest to the meeting place. You can avoid shifting the whole burden on one party by using MeetInBetween.us (meetinbetween.us).

This site's main boast is the ability to map more than two starting destinations. The first step is to fill in the Add An Address

field. After you add the first address, you can continue to add more.

When you've finished inputting addresses, simply click Find A Place To Meet. The map displays a central location and then prompts you to select the type of establishment where you'd like to meet: Food, Coffee Shop, Golf Course, Bar, Hotel, Library, Mall, Theater, Apple Store, and Other. The results are displayed below the map with each location's address and phone number. A Let's Meet Here Button displays printable driving directions to that spot from each of the inputted addresses.

MeetInBetween.us has a pleasant interface, and the results appear big and bolded. The ability to map more than two addresses is also appealing.

The primary drawback is the lack of additional information—other sites offer hyperlinks to the businesses' Web pages, online reviews, and other related features. Even though the site uses Google Maps, you won't see the typical Maps links to more detail about the business or street views.

Meet & Greet

Like MeetInBetween.us, HappyMedian (happymedian.com) uses Google Maps to locate businesses that lie somewhere between a group of possible participants. You can enter between two and four locations and then click the Go button to see suggested restaurants, golf courses, and other types of businesses. By default, the main results page doesn't show the map but only the list of businesses. You can click a button to see the map, but that seems like an unnecessary step.

MeetWays (meetways.com), another Google Maps-based application, offers service in 27 countries and is the most business-minded of the sites we visited. While it only allows searches using just two addresses, the results that appear are hyperlinked to additional information from Google about each location. Simply click the name to get Google Maps info about the establishment, including address and phone number, available reviews, photos, and more.

Like MeetWays, Mezzoman (www.mezzoman.com) provides additional information in its search results. Each result includes an address and phone number, along with a link to the corresponding Google Maps info page. Next to the results window is a Weather/Events pane that displays Yahoo! Weather information for the midpoint, if available. If there are any special events scheduled nearby, those appear in the list, as well.

Web Marks The Spot

These sites have other uses beyond finding a convenient location for one particular meeting. Looking for a school that's midway between your job and home? Looking for a house between two different jobs? Anytime you want to find a spot convenient to several other locations, each of these sites can help. ■

BY ALAN PHELPS



MeetInBetween.us takes addresses from multiple meeting participants and suggests a get-together spot that is equally convenient to all.

Microsoft PowerPoint 2007

Troubleshoot Slide Arrangement

Presentation

Intermediate

WinXP/Vista

In PowerPoint, as in real life, *when* you say something is often just as important as *what* you say. That's why most presenters spend a lot of time shuffling slides to emphasize the right points at the right times. Here are solutions to some common issues you'll run into as you're moving information around to perfect your timing.

Let's start with the basics: I need to move several slides to different positions. What's the easiest way?

You can move slides in a couple of different PowerPoint views. Normal view shows the active

slide in a large pane on the right and thumbnails of that slide and its neighbors in a pane on the left. You can rearrange slides simply by clicking them in the left pane and dragging them to a new position. To move several adjacent slides as a group, hold down SHIFT as you click the slides at the beginning

and end of the series. Then drag them as one. You can select nonadjacent slides as a group by holding down CTRL as you click each one. Note, however, that when you move this group, the slides will be placed next to each other.

I'm moving slides to a completely different part of the presentation, and Normal view doesn't show enough of the presentation's slides to give me my bearings.

That's a natural drawback of Normal view's narrow left pane. You can make the view a little more comprehensive by dragging the vertical bar between the panes to the left. This shrinks the size of the thumbnails, making more slides visible. Of course, it can shrink the slides so much that you'll have a hard time telling them apart.

When you're rearranging slides, you'll probably be more comfortable working in Slide Sorter view; open it by clicking the icon with four squares in the screen's bottom-right corner. You can see more than 100 slides in this view, if you choose (although they get pretty small in that setup). Use the sliding zoom control in the bottom-right corner to adjust the slides' size.

Move slides around by dragging and dropping them as discussed in the Normal view above.

I need a fast way to use the same slide in several parts of my presentation.

The old copy-and-paste feature does the job. Click the slide you want to copy, press CTRL-C, and then click the spot where you want the new slide to appear and press CTRL-V. You can copy several slides at once by selecting them all while holding down the SHIFT or CTRL key, and then doing the copy-and-paste operation.

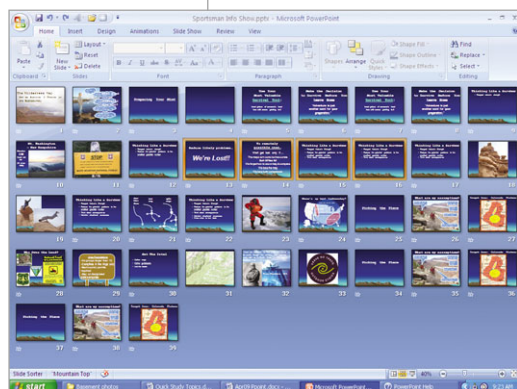
Most of my presentation's charts and photos are vertical, so it would make sense to just use vertical slides. But I've never seen this done in PowerPoint.

It's possible, but tends to be an all-or-nothing proposition. You can change every slide in the presentation from the default Landscape (horizontal) orientation to Portrait (vertical) orientation by clicking Page Setup on the Design tab. Select Portrait in the Slides section.

What does the Reuse Slides option under the Home Tab's New Slide button do?

This option lets you reuse already created slides. Select this option, and you'll see a Browse button (click it to browse to the PowerPoint presentation you'd like to borrow from), an Open A PowerPoint File link (this brings up PowerPoint presentations on your computer, which you can then choose from), and the Open A Slide Library link. You can create Slide Libraries on computers connected to a server running Office SharePoint Server 2007. Since we normally deal with standalone machines in this space, we'll only briefly summarize this feature. Slide Libraries prove handy when multiple users draw on a common supply of slides for a variety of presentations, such as when various departmental managers all need a corporate contract policy slide for talks with their teams. When you place a slide into a network library, multiple users can all pull the slides into the presentations they're creating, confident that they're all using the same version. Whenever you open a presentation using a shared slide, PowerPoint lets you know whether there have been updates to the shared slide and offers to update its content. ■

BY TREVOR MEERS



Slide Sorter view provides the most comprehensive look at a presentation, making it easy to drag slides to new locations.

Roxio PhotoSuite 8

Troubleshoot Printing

Quick Studies
Problem-Solver

Image Processing

Intermediate

8 for
Win2000/XP

Roxio PhotoSuite 8 offers numerous options for printing photographs. Along with those options, however, comes the potential for numerous problems. We cover two of the most common printing problems and how to troubleshoot them.

Problem: I can't figure out how to print a 4- x 6-inch (5 x 7, 8 x 10, etc.) photo correctly. The printed photo looks distorted or is the wrong size.

Solution: When printing a certain size photo, you must configure two main properties. First, the photo needs to have the correct ratio of height to width. For example, say you want to print a 4-inch

high by 6-inch wide photo. You must crop the photo to a ratio where the height of the photo equals two-thirds of the width. And second, once you have the proper ratio, you must print the photo to the desired, exact dimensions. For example, if you crop a photo so that the

height is two-thirds the width, you can print the photo as a 2- x 3-inch, 4- x 6-inch, or 8- x 12-inch image without losing any of the photo's content. (NOTE: Of course, the quality of the final image depends in part upon the resolution of the original photo. The larger you "blow up" an image, the more you risk losing detail in the photo.)

With the image open in the Canvas, select the Crop tool from the Task Pane. In the Crop dialog box, select the square/rectangle shape, select 4 x 6 from the drop-down menu, and choose the Landscape radio button. (Keep in mind that selecting 4 x 6 means that the ratio of height to width is 4 units by 6 units.) Place the mouse pointer on one of the corner nodes and drag and drop the pointer diagonally to maintain the 4 x 6 ratio. Next, place the pointer in the center of the crop box and drag the crop box to the desired area of the photograph. The areas that fall outside the cropped area will appear grayed out. Close the dialog box and save the cropped image.

The photo has the correct proportions, but you haven't indicated whether you want the final image to be 2 x 3 inches, 4 x 6 inches, or

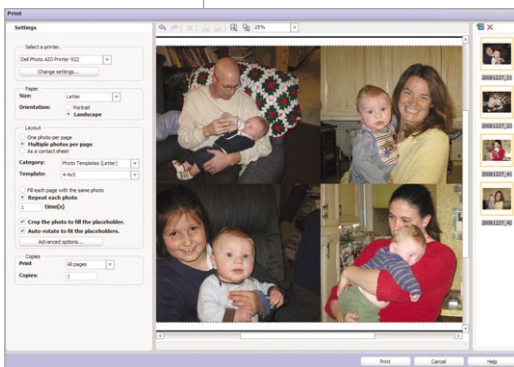
some other size. That's where the Print function comes in. From the File menu, select Print. There are a number of settings to configure, but the important ones for this exercise are in the Layout section of the left pane. In the Size drop-down box, select 4 in. x 6 in. When you do so, you will see that the Width box has the value 6.00, the Height box has the value 4.00, and the Units box shows inches. Also, be sure you have chosen the Landscape radio button. Lastly, make sure you have inserted the correct paper and selected the correct printer and then click the Print button.

Problem: Is it possible to print different photos on one page? I can't figure out how to do so.

Solution: Rest assured you're in good company. This question is frequently asked on Roxio support forums, and while we discovered multiple responses to this question, none that we found was accurate for PhotoSuite 8 users. We found a Knowledgebase article that gave directions, but they worked only if you have PhotoSuite installed as part of Easy Media Creator and not as a stand-alone product. Other help topics we found address printing multiples of the *same* photo on a single page but fail to describe how to print *different* photos on a single page.

The solution is to use the Media Manager. By selecting multiple photos and then choosing the Print function, you can print multiple, different photos on one page. Open Media Manager (from the Start menu, select All Programs, Roxio PhotoSuite 8, Organize, and Media Manager) and select, say, four different photos. Click the Print icon. By default, the radio button One Photo Per Page is selected, and you will see each photo on its own page. Select the Multiple Photos Per Page radio button, however, and you will be able to choose how many photos will display on a page and whether those photos are the same or different from one another. In the Template drop-down menu, select, for example, 4-4 x 5, which allows you to print four photos on one page. Next, select the Repeat Each Photo radio button, which lets you print different photos on one page. Click Print, and voilà! You have different photos on the same page. ■

BY HEIDI V. ANDERSON



Use Media Manager to print multiple, different photos on a single page.

Microsoft Word 2007

Quick Studies

How To

Position Images In Word: Part II

Word Processing

Intermediate

WinXP/Vista

Last month, we showed you the basics for placing and positioning an image in Microsoft Word 2007. This month, we'll show you how to more precisely position an image and work with word wrap. Open or create a document with some text in it. Click inside a paragraph or sentence and place an image using the Picture button on the Insert tab.

As we learned last month, the image is placed by default as an in-line image, so it's treated like any other character of text. Double-click the image to select it and to open the Picture Tools/Format

tab on the Ribbon. There are many options for changing the size, appearance, and location of the image, but we'll talk here about the Position and Text Wrapping functions in the Arrange group.

Click Position and More Layout Options. This opens the Advanced Layout box. Click the Text Wrapping tab in the box. The Wrapping Style area contains seven images that show you how an image will look with that particular wrap style. You will probably use the Square and Tight wrapping modes most often, so we will focus on those in this article.

Square & Tight

The Square and Tight modes are very similar. Use Square when you want to wrap text around an image in a rectangular or square shape; use Tight when you want the text to follow the lines of an irregularly shaped image. For now, click Square and then click the Picture Position tab. From here, you can specify a relative horizontal or vertical position for the image by clicking Alignment and choosing from the drop-down menus that become available. For the horizontal position, click Alignment and choose Left and Margin from the drop-down boxes. For vertical, click Alignment, Top, and Margin. Click OK. The image moves to the upper-left corner of the document.

Making Adjustments

Let's say you like the idea of having the image on the left, but you want three full lines of text to appear above it. There are at least three ways to go about this.

First, you can simply click the image and drag it to a new location. Second, you can open the Advanced Layout box again and specify an Absolute Position. Let's see what lowering the image by 0.5 inches looks like. Type that value into the box and specify Margin in the second drop-down box. Click OK. In our example, that lowered the image so that two lines of text appear above the image, and we wanted three.

Now we can use the third method. Click the image to select it and tap the Down arrow on your keyboard. This nudges the image downward a small amount with each tap. This method is useful when you need to tweak an image's position by a small amount.

Editing Wrap Points

The Wrap Text area of the Text Wrapping tab in the Advanced Layout box lets you specify which side you want the text to wrap on. This comes in handy when, for example, you use the Tight wrapping style and the text fills in areas inside the image. By choosing Left Only, Right Only, or Largest Only, you can prevent this, ensuring that your text is easily readable.

When you use the Tight wrapping style, Word creates Wrap Points that you can edit if you don't like the way the text is wrapped around the image. Double-click the image, click Text Wrapping on the Ribbon and then select Edit Wrap Points. You will see a line around the image with black boxes on it at various intervals. These boxes are the wrap points.

Hover the cursor over the line. The cursor has four dark arrows when it is over one of the wrap points. You can then click and drag the cursor to change the text wrap. The cursor appears as an open crosshair when it is over the line but not over one of the wrap points. When you click and drag in this case, a new wrap point is created.

With a little practice you'll be able to easily adjust images and text to make your Word documents crisp and readable. ■

BY TOM HANCOCK



The Tight wrapping style can cause text to fill in blank areas of the image, as you see on the top, making it hard to read. On the bottom image, we used Right Only to prevent this.

Microsoft Excel 2007

Macros

Spreadsheet

Advanced

WinXP/Vista

One definition of insanity is repeatedly doing the same thing and expecting a different result. It often seems equally insane to repeatedly do the same thing when technology could do it for you. That's where Excel's macro feature comes in, letting you create simple programming routines that do the drudge work in recurring tasks. Macros can handle simple jobs, or they can carry out more complex operations, such as sorting a list, copying the top value, opening another file, and pasting the value into cell C10.

Start your macro creation by thinking through the process you want to record. Once you start recording, Excel tracks your every move, so make sure you're moving through the steps efficiently and accurately. (NOTE: *You can always delete macros and start over.*)

Getting Started

To start making macros, you need the Developer tab on-screen. To show it, click the Office button and choose Excel Options. Click Popular and then checkmark the box for Show Developer Tab In The Ribbon and click OK. On the Developer tab, click Macro Security. Because macros are programs, they can contain malicious code such as viruses. Excel lets you decide what clearance level to allow macros on your computer. While you're creating macros, Microsoft sug-

gests you choose Enable All Macros. But just in case you couldn't tell by the "not recommended" label beside this option, we'll tell you that you don't want to stick with this setting after you finish recording the macro. The default setting of Disable All Macros With Notification makes the most sense.

Now you're ready to create your macro. On the Developer tab, click Record Macro. Assign a name to your macro, such as "CopyQuarterlySales." Sorry, but you can't use spaces here. That tends to make cryptic names, so put a brief description of the macro's function in the available box. You also can assign a CTRL-key combo, such as CTRL-Q, that launches the macro, but keep in mind that this overrides standard CTRL-key combos in the

macro's home workbook. (If you're wondering, CTRL-Q doesn't have a default assignment.)

The Store Macro In option determines when you can use your macro. To make it available anytime you use Excel, store the macro in the Personal Macro Workbook.

Recording & Running Your Macro

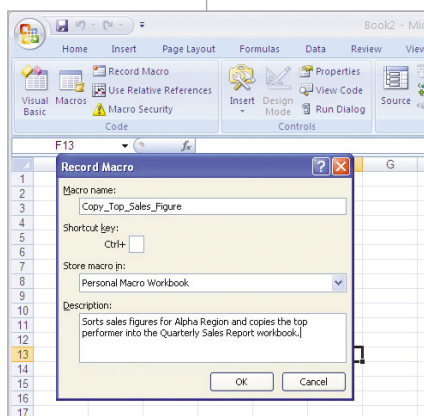
When you click OK in the Record Macro box, Excel starts watching your moves. Work through the steps you want the macro to mimic by highlighting cells, carrying out operations, opening files, etc. Even if you move slowly, the macro you create will run through the sequence quickly. When you're done, click the Developer tab and Stop Recording.

Now it's time to try your new macro. If you assigned a shortcut key to the macro, press it anytime to start the process. You also can start a macro by clicking Macros on the Developer tab, clicking a macro's name on the list, and clicking Run. You can put this same list of macros in the Quick Access Toolbar in the upper-left corner of the screen. To do so, click the Office button and choose Excel Options and Customize. From the list on the left, choose View Macros and then click Add and OK. If you want to add a specific macro to the toolbar, choose Macros from the drop-down list at the top of the Customize The Quick Access Toolbar box and click the macro's name and Add.

Editing & Deleting Macros

You can tinker with a macro's code in the Visual Basic Editor, but popping the hood on even this simple type of programming code is more than most users want to deal with. With basic macros, the best approach to editing them is probably to replace the old macro with a new one by creating a new macro with the same name.

To eliminate a macro, choose it in the Macro dialog box and click Delete. The first time you do this, you'll probably see a message about a hidden workbook. This refers to the Personal Workbook Excel creates to hold your macros. Go to the View menu of the active workbook and choose Unhide and then pick Personal.xlsb off the list and click OK. Now you can delete macros. ■



Save yourself some steps and feel like a programmer in the process! Use Excel's point-and-click macro tools to create a routine that carries out tasks for you.

BY TREVOR MEERS

Quick Tips

Secrets For Succeeding In Common Tasks

BY STEPHEN J. BIGELOW

Microsoft Access

Question: How can I completely delete a database in Microsoft Access?

Answer: Database files can be erased in Microsoft Access 2003 using the same process employed for any other Office application. Launch Access 2003, click File in the menu bar (for Access 2007, click the Microsoft Office button in the upper-left corner of the application), and click Open. The Open dialog box appears with a list of available

database files. Simply right-click the file name of the database to delete and then select Delete from the context menu. Confirm the deletion; this will send the selected database to the Recycle Bin.

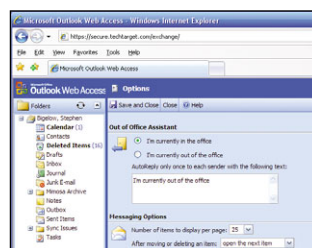
You can also delete a database file outside of Access by simply dragging and dropping the desired file into the Recycle Bin from any open folder. Just remember that you cannot delete a database that is open.

Email

Question: How do I set up an “away message” in Microsoft Web mail?

Answer: Open Microsoft Office Outlook Web Access for Exchange Server 2003 in a browser window and click Options from the lower-left menu. The “away message” is actually the Out Of Office Assistant option at the top of the list. Simply type your away message in the text box. If you will be out of the office, click the I’m Currently Out Of The Office radio button. When you return to the office, click the I’m Currently In The Office button. You should tailor your away

message for specific dates or events so that business contacts know when they should expect you to return. Remember to click the Save And Close button when finished.



Microsoft Outlook Web mail lets you set an Out Of Office Assistant to notify others that you will be away from your email.

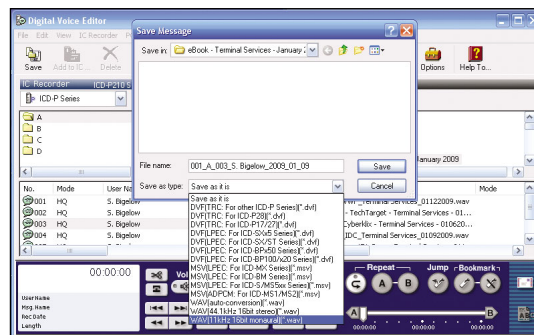
Sound Recording

Question: I use a digital voice recorder and often transfer those recordings to my PC. How can I reduce the amount of hard drive space used by those recordings?

Answer: Check the PC application that accompanied your digital recorder. Products such as the Sony ICD-P210 include Digital Voice Editor software that lets you transfer voice files to the PC and listen to them for reference or transcription. By default, the application saves voice data in 44.1kHz 16-bit stereo (CD-quality) WAV format, but this can demand upward of several megabytes per minute of storage space. Instead, select a more space-conscious file format, such as 11kHz 16-bit mono WAV format, which uses only about one-eighth of the space.

Remember that reducing the data rate also reduces sound quality of the saved file. If you just

need to review your personal notes, this is perfectly fine. But if you plan to use the recording with any other media (such as to create a podcast), it might be worth saving the recording in the better-quality format to create the best-sounding final product.



Select an audio file format to save space on your PC, but keep in mind that reducing the data rate also reduces sound quality.

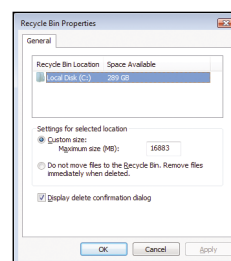
Recycle Bin

Question: Why does my system inform me that the folders I'm deleting are too big for the Recycle Bin? Am I out of drive space, or is there another problem?

Answer: This is probably not a problem. Chances are that you have run out of space in the Recycle Bin itself. Remember that the Recycle Bin is simply a small portion of hard drive space that has been set aside as a temporary repository for deleted items. It's comparable to a physical trash basket—if you throw things out but never empty the trash, the basket will eventually get full and not hold any more trash.

One way to ease this trouble is to be diligent and empty the Recycle Bin regularly by right-clicking the icon and selecting Empty Recycle Bin from

the menu. If you absolutely have to hold more content in your Recycle Bin, right-click the icon and select Properties. For Windows Vista, enter a new Custom Size in megabytes. (Remember that 1,000MB is equal to 1GB.) Using Windows XP, select the Global tab and move the Maximum Size Of Recycle Bin slider. It's usually taken as a percentage of the drive capacity; for example, a 10% setting on a 350GB hard drive would give you a 35GB Recycle Bin.



Change the Recycle Bin size to accommodate more or less trash, or turn off the Recycle Bin entirely.

CDs & DVDs

Question: How long should a recorded CD or DVD last? I've heard the lifetime of optical media is anywhere from five years all the way up to 100 years.

Answer: The reliable life span of optical media can easily vary from just a few years up to 50 years and more. There is no definitive answer because there are so many variables involved. These include the quality of the media in its materials and fabrication techniques, along with the handling and storage conditions for the media. You don't have to be a material scientist to recognize that a DVD kept protected in its jewel case and stored in a cool dry place will last a lot longer than a disc that's tossed around and left in your car year-round.

Average home users probably won't need Microsoft Money backups or MP3 CDs for more than just a few years, and most name-brand media will easily retain their contents for years if you make an effort to protect the discs. Companies generally need to keep their data for a longer period (depending on their industry and compliance obligations) and will need to pay closer attention to the media quality and storage conditions.

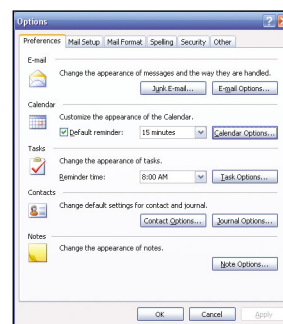
But the argument is largely a nonissue in any case because optical media should generally last far longer than the need for the data and even longer than the playback technology will be available.

Microsoft Outlook

Question: I'm using the Calendar in Microsoft Outlook to help schedule my day, but how can I get reminders to work instead of constantly checking the calendar entries?

Answer: You can tell Outlook to display reminders of calendared appointments. With Outlook running (it does not have to be in Calendar mode), click Tools and Options. The Calendar area of the Preferences tab lets you enable reminders by clicking the Default Reminder checkbox and setting a reminder time in the drop-down menu. In most cases, the 15 minute default reminder is fine. Just remember

that you need to have Outlook running in order to see the reminders, so if you're going to be running around to appointments all day, it might be a better idea to print the day's appointments the night before and leave reminders disabled.



Turn on Microsoft Outlook Calendar reminders to help keep your daily schedule on track.

Smartcomputing.com Chat Rooms: Stop By & Chat!

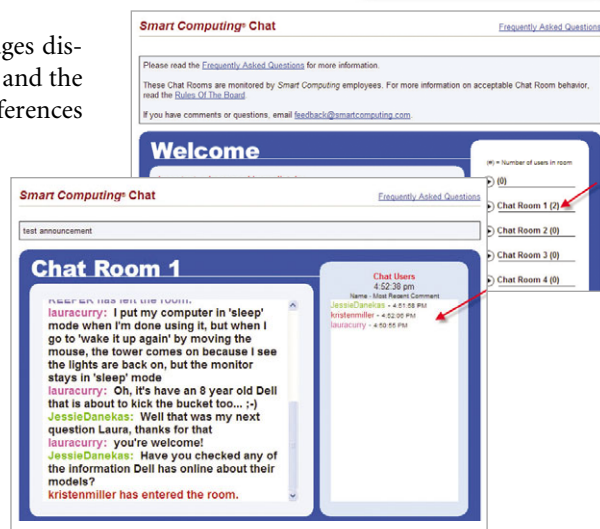
Finding the computing answers you need can be an intimidating task. SmartComputing.com provides you with an informal, easy-to-use chat room where you can discuss everything from computer problems to the latest issue of *Smart Computing*. Don't forget to check out the Frequently Asked Questions section and Rules Of The Board. The busiest times for chat rooms usually start around 8 p.m. CST. Getting started is easy. Here's how:

- 1 After logging in, click the Computing Chat Room link on the left side of the home page.
- 2 Read the Frequently Asked Questions and Rules Of The Board at the top of the page.
- 3 There are six rooms to choose from; rooms with people are noted with the number of users in parentheses next to the room number.
- 4 Click the numbered chat room link you wish to enter.
(NOTE: Chat Room 1 is usually busiest.)
- 5 You'll see a list of current chat users on the right, in different colors and the conversation in the main screen on the left.



To change the way messages display, the screen refresh rate, and the font size, click the Chat Preferences link. Select your preferences and click Save.

Join the conversation by entering a comment in the Type In Comment box and clicking the Send/Refresh button. When you finish chatting, click Exit Room.



Smart Computing's Dictionary

motherboard

The printed circuit board that is the foundation of a computer. This board contains a computer's CPU (central processing unit), RAM (random-access memory) chips, and expansion slots. The motherboard is where all of the computer's components meet. Also called system board or mainboard.

Smart Computing Blog

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SmartComputing.com Daily



PC Case Form Factors

Computer users know it's what's inside that counts—inside that box of plastic and metal, that is. A computer case is not something that's simply slapped together without any thought. On the contrary, it's just as important as the components installed within it.

A computer case goes by many names—chassis, box, enclosure, cabinet, etc. These descriptions all share the same definition: a case that functions as the computer's body that houses all the vital parts, including

the motherboard, power supply unit, optical drives, and hard drives, as well as venting and cooling systems.

While the categorization of particular types of cases varies depending on how specifically you want to label each model, there are some general parameters that will help you determine one case from another. If you're growing as a PC enthusiast, you can consider how to customize your case to match your interests. Even so, PC cases are mostly form over function, and you can't go wrong with sleek and simple.



Towers

These large workstations are commonly called “desktops” because they're tall and can easily sit on a standard desk. However, true desktop computers (which we address later) are constructed in a horizontal style, with more width than height.



Mini. Mini towers are rather self-explanatory: They're small cases for small spaces. This size is most practical for common activities that you do while computing at the office or at home. As a small form factor, mini towers don't afford much room for upgrading (it's difficult to install extra components in the limited space), but they prove to be the most convenient size for the average user. (Shown: Dell Optiplex 755)

Midsized. The middle man between mini and full-sized, a midsized tower is considered to be the average tower size, with enough expandability options for multiple drives. This model is also a prime choice for business users who may desire a case that provides flexibility. You'll find a wide-ranging set of features and aesthetic characteristics in this category. (Shown: Dell Precision 390)



Desktops

Don't read into this description too much—yes, a desktop computer does what it says: It resides on top of your desk. But, there are some desktops that might fit better in your entertainment center, or others may fit nicely under your desk.

Standard. A traditional desktop sits “landscape-style” on a desk; in other words, it's not designed to be upright. You could liken its dimensions to a VCR, in traditional terms. However, this style is not conducive to additions or upgrades because it's ideal for minimizing occupied space on a desk, especially when the monitor rests on top of the chassis. (Shown: Dell Hybrid PC)



Slimline. A slimline case won't easily support add-ins, but it's a great fit for someone who simply wants to use a PC for surfing the Web, word processing, and storing some essential media such as photos and music. If you're short on workspace, a slimline is appropriate for a cramped environment. (Shown: Dell Inspiron 530s)

Full-sized. A full-sized tower is most beneficial to individual PC builders due to its ability to house the most components. If you anticipate adding more hard drives or additional optical drives, a full-sized case will provide the room you need with up to seven drive bays. If you'd prefer to conceal your tower under a desk, this may not be the choice for you, depending on the height of the case you've selected. (Shown: HP Pavilion Elite d5000)



Rackmount

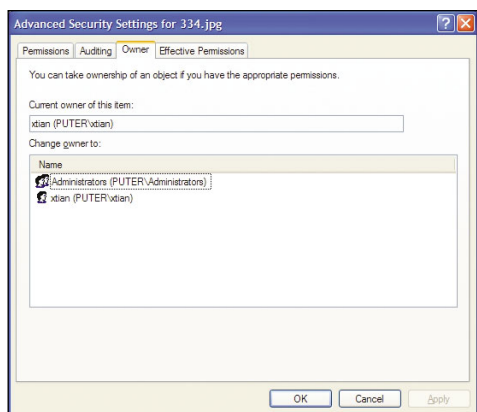
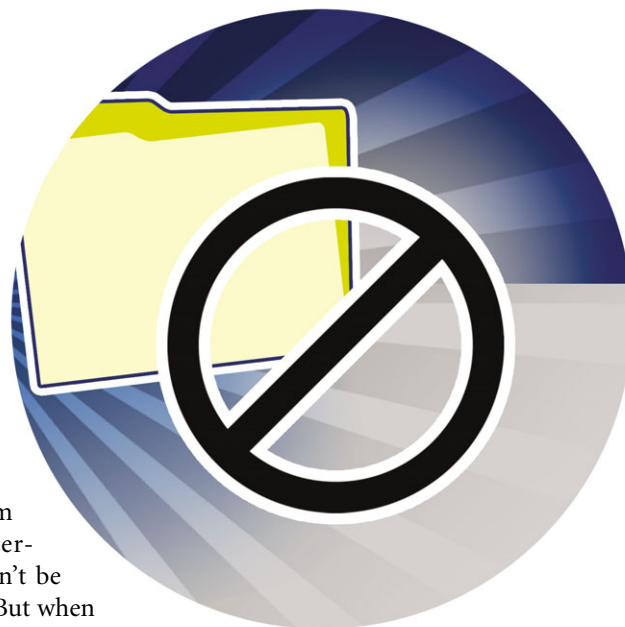
These cases are typically utilized in a business' information data center or the system that houses backup storage and other components that support the internal operations of a company. If you were to walk into an IT operations room, you might see tall, metal racks (for servers roughly the size of a pizza box) stacked on top of one another. (Shown: Dell PowerEdge 2970)



What To Do When Windows Refuses Access To Files & Folders

When does a Windows-related task cross the dreaded line into annoyance? A perfect example occurs when Windows refuses the deletion or move of a file or folder. Although it shouldn't be asking too much of a modern operating system to move or delete a file when we want that file moved or deleted, Windows is programmed to protect

under the assumption that if another program needs the file, then certainly the user shouldn't be deleting or moving it. But when you want to move or delete a file, you want it done now—not when Windows deems it acceptable to do so. If a simple reboot doesn't free the file, it's time to take more extensive action.



By switching the ownership of a file or folder to your current user profile, you can circumvent Windows restrictions when it detects that the object was created by another user.

files from modification under certain circumstances.

For example, if a program is currently using the file in question, Windows might refuse to delete it because it assumes that the file is needed by the user if an open program is accessing the file. In theory, this system can help prevent files from being accidentally moved or deleted, as it works

Take Ownership

Windows often will not grant permission to move or delete a file or folder when the operating system determines that the object belongs to another user. This denial of access can also occasionally occur if you try to delete or move certain files or folders that were created using a previous installation of Windows. When Windows denies access to a file or folder created by another user (or perhaps created by you under a different user account), it's possible to take "ownership" of the file or folder, which in turn al-

lows you to move or delete it. A file or folder's owner determines who has permission to perform certain actions (including reading, writing, or modifying) on the object. Before taking ownership, you must perform a few initial steps to ensure the ownership transfer will go smoothly.

First, make sure you're logged in as an administrator. If you're unsure whether

the account you're using has administrator privileges, visit the following Web site: support.microsoft.com/gp/admin. Here you'll find instructions for determining your current account's privileges, and if you discover you're not logged in as an administrator, you'll also find instructions here for doing so.

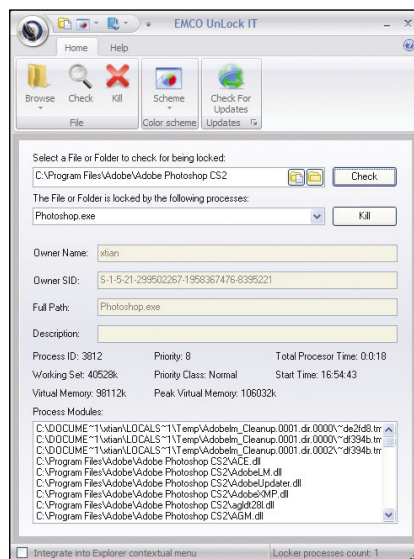
If you're using Windows XP Home Edition, first boot into Safe Mode by restarting your PC and pressing and holding your keyboard's F8 key until the boot menu appears. Choose the Safe Mode option. If you're using Windows Vista or WinXP Professional, you'll need to turn off simple file sharing (if it's enabled). In WinXP, click Start, click My Computer, and click Folder Options in the Tools menu. Choose the View tab, and in the Advanced Settings area, click to clear the Use Simple File Sharing (Recommended) box. Click OK.

In Windows Vista, open the Control Panel (using the Classic View), double-click the Network And Sharing Center icon, and then click the arrow to the right of File Sharing. Under File Sharing, choose the Turn Off File Sharing radio button, click Apply, and click Continue if prompted by Vista's User Account Control. Note that after

you've solved your file access problem, you should enable simple file sharing once again if you originally had it enabled.

Next, it's time to take ownership of the file you're trying to delete or move. Right-click the file, click Properties, and then choose the Security tab. Click the Advanced button at the bottom of the tab and then choose the Owner tab. In this tab, the current owner of the file or folder will be indicated beneath Current Owner.

To change the ownership of the item in WinXP, select a different owner under Change Owner To and click Apply. The owner you select should be the user profile you're currently using so that you can immediately move or delete the item in question. In Vista, click the Edit button on the owner tab, select a new owner, and click Apply. You'll then see a security warning that indicates you've just taken ownership of the object and that you'll need to close and reopen the Properties box before you can view or change permissions. Once you've changed the ownership of the file or folder to your current user profile, you should be able to move or delete the item.



Programs such as Emco's UnLockIT can provide one-touch access to a list of processes currently locking a file, as well as the easy ability to release that lock.

in others, the source of the problem can be more elusive.

If you're unable to determine precisely what is preventing you from moving or deleting something, first close all open programs. Still no luck? Open the Windows Task Manager by pressing CTRL-ALT-DELETE. On the Processes tab, you'll find a list of all

the file. Repeat the process until you're successful.

If you're still having problems, boot into Safe Mode (see instructions provided earlier in this article) and try again. Because Safe Mode loads only essential programs and drivers, it's unlikely that files previously locked by processes will remain locked in Safe Mode, unless a file happens to be continuously used by one of those essential processes. Once in Safe Mode, try moving or deleting the item.

Seek Outside Help

The fixes and workarounds detailed in this article will fix most file access problems. But if you're still unable to access files or folders, or if you encounter access problems on a regular basis, consider using software that's designed specifically to unlock files.

Free, tried-and-true programs include Unlocker (ccollomb.free.fr/unlocker), UnLockIT (tinyurl.com/da6fwo), and FreeFile (www.grublertrang.com). Programs such as these can not only help to allow access to items, but they will also indicate which processes are locking your files or folders.

Furthermore, certain spyware and other malware files are designed to prevent deletion by standard means, but these programs can force their deletion. These programs are particularly useful when access problems occur regularly because some of them integrate controls into the Windows Explorer interface,

giving you easy right-click access to process information.

Although access problems can be highly annoying when first encountered, there's always a way to force access and perform a move or deletion, so don't let Windows rule the roost when it comes to files and folders on your PC. ■

BY CHRISTIAN PERRY

If a simple reboot doesn't free the file, it's time to take more extensive action.

Free Up Those Files

Although the transfer of ownership will solve access denial problems in many cases, it won't work all of the time. Occasionally, Windows will prevent users from accessing files when it detects that another program is currently using that file. In some cases, the problem is obvious—for example, when trying to delete a Microsoft Word file that is currently open—but

running processes. Although many of these processes are required by the system, one of the others could be the culprit. Try closing suspect processes by selecting each one, clicking End Process, and clicking Yes to confirm the termination. If you're not sure what a process does or if it's OK to stop, visit www.processlibrary.com to learn more about it. Stop processes one at a time and try to access

How To Fix Common Problems With GPS Navigation Devices

You love the simplicity that your GPS (global positioning system) navigation device brings to your weekend road trips, but you're not crazy about the times it starts acting up. Freezing, blank screens, and missing satellite signals are just some of the common problems you might encounter. Many GPS problems can be resolved by simply updating your unit's firmware. Other issues, however, call for additional troubleshooting. We'll show you how to update your GPS firmware and describe some possible solutions for the most common GPS errors.

Firmware Fixes

Firmware is the software program that tells your GPS device what to do. It's somewhat like the OS (operating system) on your computer and will need to be updated occasionally to keep your GPS device working correctly. You can update your GPS device's firmware by visiting the manufacturer's Web site and navigating to the support or updates page. The update process will differ depending on the brand and model of your GPS device, but in most cases, you'll need to connect your GPS to your computer and download the update directly to your device.

Some manufacturer Web sites may prompt you to select the series and model of your GPS and then direct you to a page that alerts you of any available updates. Magellan (www.magellangps.com) makes it easy to update because each of their GPS models has its own dedicated page, complete with firmware updates, users manuals, and FAQs. Other manufacturers' sites may have special software that you can download to help

make updating even easier. For example, to update your Garmin GPS device, you'll have to download the Garmin WebUpdater program. Point your browser to www.garmin.com, mouse over Support at the top of the page, and select Updates & Downloads. Click Unit Software and on the next page, choose Download And Install WebUpdater from the options. Once you've downloaded and installed the program, connect your GPS device to your computer, open WebUpdater, and follow the on-screen directions to install updates on your GPS device.

If you're having trouble finding updates on the manufacturer's Web site, consult your users manual. It should include Web addresses for the company's support and update pages and may even include instructions for updating your device.

Problem: My GPS device won't turn on.

Solution: It's always a good idea to start with the easiest solution, even if it



seems obvious. First, press the Power button again to be sure the device recognized that it was supposed to turn on. You may try holding the Power button down for several seconds, ensuring a proper connection. If the device doesn't turn on, be sure that the battery is fully charged. If not, connect your GPS device to its included charger and let the battery charge to full capacity. If you're already in the car, try connecting your GPS device to the accessory power plug (cigarette lighter), which is a good way to make sure there is power going to the unit. Try pressing the Power button and holding it down to activate your GPS.

If the device still doesn't power on, try a hard reset. On most GPS devices, the reset button is found on the bottom or back of the unit and will require the tip of a pen or paperclip to press. If your GPS still does not power on after you reset it, you may be experiencing a hardware failure.

Problem: My GPS is frozen.

Solution: Your GPS device could freeze for several reasons. You may have an outdated version of your unit's software or firmware, or the



Garmin makes it easy to update your GPS device's firmware with its WebUpdater application that automatically searches for the update you need.



Resetting your GPS device is usually easiest to do with an unfolded paper clip.

newest version didn't install correctly. If you've installed an additional application such as a map or game, it could be that the installation went awry or didn't complete.

First, make sure your GPS firmware is up-to-date. Visit the manufacturer's Web site as described earlier and search for available updates for your GPS model. Download and install the update and test your device to see if it still freezes. If freezing persists, try resetting your device with the tip of a pen or unfolded paper clip.

Finally, make sure that any applications you are using are up-to-date. Take note of which application was running when your GPS stopped working. If you think a specific application is the culprit, try uninstalling and reinstalling to make sure there wasn't an error when you originally installed the program.

For example, if you have a TomTom GPS device, connect it to your computer via the USB port. Turn your GPS on and press Yes to connect to the computer. Start the TomTom Home application and choose Remove Items

from the main menu. Click the plus (+) symbol next to Application and checkmark the box to the right of the program you want to remove. When you check the box, you will see a warning message. Click Yes and then click the Remove Selected Items button. A second warning message may appear; click OK. If you are asked to copy the item to your computer, say no. Instead, uncheck the box next to the program and then click Continue. The application will be removed and ready for you to attempt to reinstall.

Problem: My computer won't recognize my GPS device.

Solution: When you connect your GPS device to your computer via the USB port, your computer generally recognizes the connected device right away and prompts you with a menu of possible actions, or your GPS device gives you the option to connect to the computer. Sometimes your computer may take a few moments to identify the device, so wait before proceeding.

Check to make sure your GPS is fully charged. Many devices must be

turned on in order for the computer to communicate with them, and an uncharged battery prevents you from powering on your GPS. Once the battery is charged, reconnect your device and turn it on. If the computer doesn't see your GPS after a few moments, try another USB port on your computer. If you are not prompted by your GPS unit to connect to the computer, check to see if your device is listed under the Devices With Removable Storage section in Computer (click Start and Computer in Vista). If not, the next step is to enable your GPS in the Device Manager.

In the Computer window, select System Properties at the top of the page and then click Device Manager on the left menu. In the Device Manager, expand the list for Disk drives and locate your GPS device. Right-click your device and choose Enable. When complete, your device should be listed as a removable storage device in Computer and should be recognized.

Problem: My GPS device doesn't acquire satellite signals.

Solution: If you're starting your GPS for the first time, it may take several minutes for the device to detect a satellite signal. This can also be the case if you haven't used your GPS for a long period of time or you have relocated the device without using it (traveling by plane, for example). Be sure to give your GPS plenty of time to acquire a signal before you try other solutions.

Your GPS device may have trouble detecting a signal if you are indoors or surrounded by tall trees or buildings. Try moving to a clear location where your GPS can acquire a satellite connection. Acquiring a satellite signal can sometimes be difficult from inside your car, particularly if you have a specially coated windshield. You can boost your device's reception by purchasing an external antenna that connects to your GPS and attaches magnetically to the inside or outside of your car. Many

antennas are made for specific models, however, so be sure to check for compatibility.

Other suggestions include powering your device off and then on again, installing the latest software for your device, and resetting the device before trying again to acquire a signal.

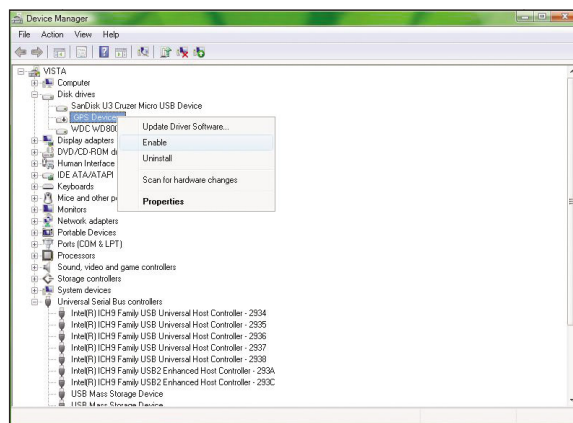
Problem: I get a “no maps found” error on my GPS device.

Solution: First, ensure that the map you’ve downloaded hasn’t been used on any other device. Maps can only be used on the device for which you download them and cannot be transferred or copied to other devices.

If you’ve recently installed a new map, chances are it’s incompatible with your device’s current software version. Check the manufacturer’s Web site and install any updates available. If the message still displays after you’ve updated your device’s software, the next step is to ensure that the map you installed was completely downloaded on your device. Revisit the manufacturer’s Web site and navigate to the page where you downloaded the map. Write down the download’s size (it should be several megabytes). In Windows Vista, go to Start and Computer and select your GPS from the list of devices with removable storage. Navigate to the map folder on your GPS device and locate the map file you downloaded. Check the file’s size by right-clicking the folder and choosing Properties. The size you wrote down may differ from the actual size by a few megabytes. But if the file size on your GPS is significantly smaller, the map didn’t install correctly or in its entirety. Try reinstalling the map. Follow the instructions in your device’s users manual if you are unsure how to install maps and applications on your GPS.

Problem: I lost my users manual. What should I do?

Solution: If you lose or misplace your users manual, don’t fret. You can



If your computer cannot identify your GPS, enter the Device Manager to enable your unit.

likely download a copy from the manufacturer’s Web site. Manuals are usually available in PDF (portable document format), making it easy for you to print them out or save them to your computer. Typically, you can find your manual in the support or download section of the manufacturer’s Web site, but we’ve included specific instructions for several GPS manufacturers.

Garmin. Point your browser to www.garmin.com and mouse over Support at the top of the page. From



An external antenna such as Mio’s External GPS Antenna (\$17.99; www.mio.com) can help increase your GPS reception.

the list that appears, choose Manuals. On the next page, select Mobile Electronics for the Select Market field. For in-car GPS devices, choose Automotive in the second field and

then choose your device’s model. Click Show Me for a list of available manuals. Look for an Owner’s Manual or Quick Start guide. All of Garmin’s manuals are in PDF.

TomTom. Navigate to www.tom-tom.com and click the Support link found on the top menu. On the next page, click Find Your Manual in the small gray Manuals box on the right side. The next page lists each TomTom model and its respective manual.

Some models also have installation posters or other guides pertaining to their specific features.

Magellan. Make your way to www.magellangps.com and mouse over the Support link at the top of the page. Choose Downloads, Updates, FAQs (it’s the first on the list). On the right, use the drop-down menu to select your Magellan product family. Then select your device’s model and click Submit. The next page will feature the manual, along with updates, maps, and frequently asked questions. Click the link to your manual to save or print the document.

Navigon. Click the Support link on the main menu at www.navigonusa.com. Choose Navigon Product User Guides on the right sidebar and select your GPS model from the list on the resulting page. Each guide is available in English, French, and Spanish.

What’s Next?

You’ve tried our solutions, but your GPS is still acting up. What’s next? Several times throughout this article, we directed you to your GPS manufacturer’s Web site. In addition to updates and product manuals, the Web site will also feature a support forum or FAQ section where you can search for additional answers to your specific problem. ■

BY KRIS GLASER

How To Install A Motherboard

Rome wasn't built in a day, mainly because its founders knew that it had to be erected on a solid base. It's best to take the same approach when you're laying the foundation for a new computer, so to speak.

The **motherboard**, or mainboard, is the biggest circuit board in a PC. Everything connects to it, from the CPU to the RAM to the hard drive. A suitable mainboard not only supports all the technologies used by your processor, graphics card, and the like, but it also lets them send data to each other at their top speeds.

In this article, we're going to tell you how to install a motherboard in a new PC you're building. If you're replacing the board in an existing computer, our installation steps also apply to your situation.

First, however, let's talk about how to start shopping.

Wanted: A New Mom

The motherboard affects everything else in the computer, so it has to be compatible with every part and device you plan to use in your new PC. In fact, your choice of a mainboard has such a big impact on the rest of your parts list that we suggest buying it before you buy anything else, except perhaps the processor. Let's take it from the top.

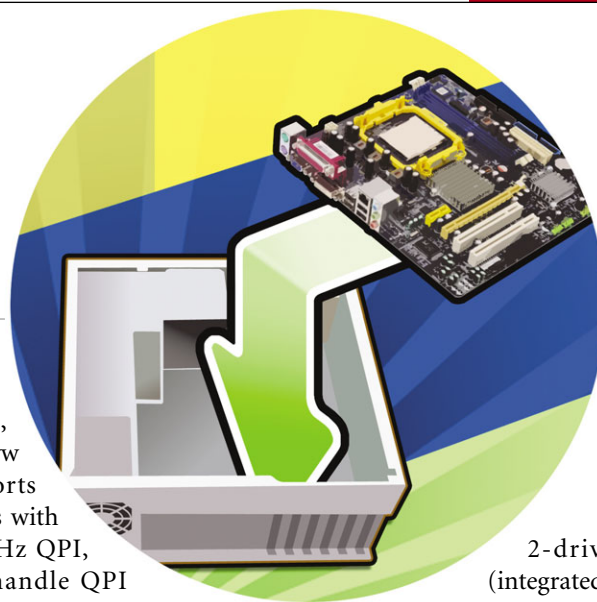
Processor. Once you've decided on a CPU, such as Intel's Core i7 (www.intel.com) or AMD's Phenom II (www.amd.com), look for a mainboard that supports the chip's socket type, such as LGA1366 (a land grid array with 1,366 tiny metal springs) or Socket AM2+. You'll also want the motherboard to match or exceed the speed of the CPU's data pathway to the RAM, such as QPI (Quick Path Interconnect),

HyperTransport, or FSB (front side bus). For instance, the ASUS P6T (www.asus.com) supports Core i7 processors with 1,066 or 1,333MHz QPI, but it can also handle QPI speeds up to 2GHz.

Memory. The processor you select will largely determine the speed and type of RAM you can use with it, such as 800MHz DDR2 (double data rate 2) or 1,600MHz DDR3. Select a motherboard that expressly supports the exact type of memory your CPU needs.

Depending on the capabilities of the board's **chipset**, or core logic chips, you might be able to install two or three matching sticks of RAM in a dual- or triple-channel configuration, respectively. These let the CPU talk to more than one memory module at a time for a slight speed boost.

Ports and interfaces. Besides support for the latest processors and memory, a new motherboard may come with the newest ports and slots. Some examples are PCI-E (Express) 2.0 for graphics and expansion cards, eSATA for external SATA (Serial Advanced Technology Attachment) hard drives, SAS (Serial Attached SCSI [Small Computer System Interface]) for server hard drives, and HDMI (High-Definition Multimedia Interface) for audio/video output to an HDTV or receiver (boards with integrated graphics only). You may need to install some ports by connecting included expansion slot bracket cables to **headers** (pin connectors) on the board. Standard connections that come with virtually any new mainboard include SATA, Gigabit Ethernet, at least one



2-drive IDE (integrated device electronics) connector, and surround-sound outputs for the onboard audio processor.

On the other hand, depending on the motherboard model, you may lose older ports necessary for "legacy" peripherals, such as your keyboard, printer, scanner, or storage devices. For instance, the Intel DX48BT2 board has no parallel, serial, or PS/2 (Personal System) ports, and it lacks a floppy drive connector, too. This mainboard is strictly for users who have no old devices and who plan to use current operating systems.

There are ways to add legacy device support, however. You can add parallel ports, IDE headers, and more through expansion cards. Also, you can attach a PS/2 mouse to a USB port with an inexpensive adapter, but you'll likely need a pricier, active converter to connect a PS/2 keyboard to USB in this way.

Finally, make sure that the power supply unit you buy has the motherboard's types of power connectors. For instance, to run an Intel DX58SO board, you would need a PSU with 24-pin, 8-pin, and 4-pin Molex connectors.

Special technologies. Another thing to consider before you buy a mainboard is its roster of special features. Some new boards come with "instant-on" operating environments such as Phoenix HyperSpace or Asus Express Gate, which allow you to quickly boot to a non-Windows GUI (graphical user interface) to surf the Web, send email, and more.

Gamers may want support for Nvidia's SLI (Scalable Link Interface) and/or AMD's CrossFireX. These technologies allow you to use two or more graphics cards in tandem for demanding applications such as games and certain video-editing software.



Most new motherboards come with a driver CD, a users manual with installation instructions, drive cables, and a metal I/O shield.

Most motherboards limit you to using only SLI (with Nvidia-based cards) or CrossFireX (with AMD/ATI-based cards), but not both. However, recent boards with Intel's X58 chipset allow you to use either scheme.

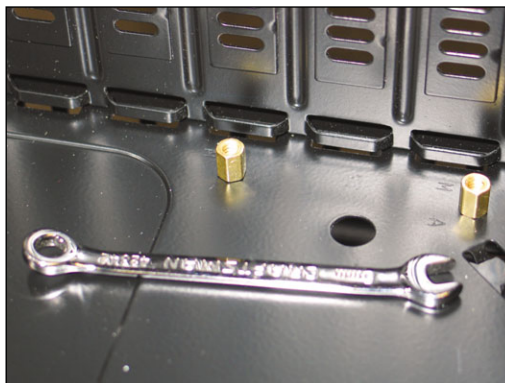
A word on quality. Unless you enjoy chasing down odd errors due to an unstable system, buy a motherboard from a reputable manufacturer such as Asus, Gigabyte (www.gigabyte.com.tw), or Intel. Like no-name RAM or a bargain-bin power supply, an el cheapo motherboard may be penny wise, pound foolish.

That said, all motherboards have quirks that may or may not be fixable with free BIOS updates, which also typically add support for newer CPUs as they become available. Some mainboards, however, have design problems. Occasionally a V2 (version 2) edition of a board solves issues that weren't correctable through a BIOS or chipset driver update. If the motherboard you've selected comes in more than one version, be sure to buy the latest one. Don't forget to check user reviews on online shopping sites. *Smart Computing* subscribers can also

access in-depth reviews from our sister publication *CPU* on CPUMag.com.

Installation

Before you attempt to install your new motherboard in your computer



If your case has screw-in metal standoffs on which to mount the motherboard, be sure that there aren't any under parts of the board without mounting holes.

case, read the board's users manual. Pay special attention to the labeled map of the ports and headers on the board.

1 If you have a tower case, remove the panel that's on the left side of the case when its front is facing you. Lay the case down on its right side. For a slimline or SFF (small-form-factor) case, remove the top panel or follow the manufacturer's instructions. Work carefully and touch a bare metal part of a grounded object every so often to dispel static.

2 Next, install the power supply. Drape its cables over the side and out of the interior. (For instructions on how to install the PSU, as well as the processor, the RAM, and other devices, subscribers can read our Tech Support Center articles at tiny.cc/f4ZWf.) Leave the power supply unplugged.

3 The motherboard should have come with an I/O (input/output) shield. This rectangular piece of shiny

metal has cutouts for the ports and connectors mounted on the rear of the motherboard. It isn't a crucial part, but it does add extra grounding to the ports. The shield also helps the case fans to work more efficiently by blocking off a large hole that would

depressurize the beneficial airstream between the intake and exhaust fans. Working from the inside of the computer case, slip one end of the I/O shield, ports side down, into the rectangular hole along the rear panel. Firmly press the edges of the I/O shield until the whole thing pops into place.

4 Computer cases use different types of standoffs (spacers) for motherboard mounting. Standoffs keep the underside of the board raised about a quarter of an inch above the metal mounting tray. Some standoffs are permanently stamped into the tray; others require you to install hexagonal screw-in standoffs with a 5mm wrench; still others are plastic.

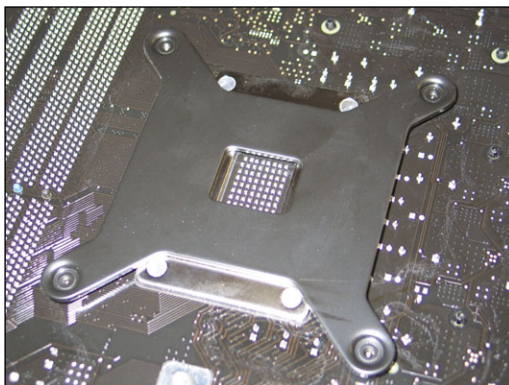


Firmly press the edges of the I/O shield into the rectangular slot in the back of the case.

The standoffs correspond to mounting holes in the motherboard. The idea is to screw the board to each spacer to keep it in place. However, not all motherboards have the typical nine or 10 mounting holes. It's critical

that you make sure that there are no metal standoffs under a part of the board without a hole, or it may cause a damaging electrical short. Remove any unneeded screw-in standoffs. If there's a stamped spacer in an inauspicious spot, cover it with two pieces of black electrical tape.

5 If you're planning to install an aftermarket heatsink on your processor, you may need to attach a mounting brace to the back of the motherboard before you install it in the case. Follow the heatsink's directions.



If you're installing an aftermarket heatsink for better or quieter cooling, you'll probably have to bolt a plate on the back of the motherboard before you install the board in the case.

6 Hold the motherboard by the edges. Watch out for sharp solder points on the underside, and don't break off any of the cylindrical capacitors on the top of the board.

To install the motherboard in the case, you may need to maneuver its rear ports under the grounding tabs of the metal I/O shield in the rear of the case. These tabs are meant to press

tabs in the way, lay the board down on the standoffs. Loosely screw down one corner of the board, and then the opposite corner. Do likewise for the rest of the mounting holes. Once all of the screws are started, tighten them down.

the board's CPU fan header. Install the RAM and your graphics card and its power cable, if any. Mount the hard drive, the floppy drive (if any), and the optical drive and connect their data and power cables. You might need a floppy drive if you plan to install Windows XP



As you lower the motherboard into place, carefully duck its rear port housings under any grounding tabs of the metal I/O shield.

7 It's time to connect the main power harnesses. Your motherboard may have a 24- or 20-pin main connector (on some 24-pin units, you can detach four pins), plus an 8-pin and/or 4-pin auxiliary hookup. Again, keep the PSU unplugged from any AC power source.

Next, connect any case fans to the labeled headers on the board or directly to the PSU. Also, hook up any front-mounted USB ports to the indicated 9-pin headers.

Following the motherboard manual's diagram of the front panel connections, slip the small rectangular connectors for the case's front switches (power and reset) and LEDs (power and hard drive activity light-emitting diodes) onto the proper header pins. The power and drive activity LEDs won't work if their connectors are on backward,

so be sure to match their positive (+) or negative (-) markings to the headers. Generally, the white or black wire is the negative line.

Now install the CPU and its heatsink and don't forget to plug its fan cable into

on a SATA drive or a RAID (redundant array of independent disks).

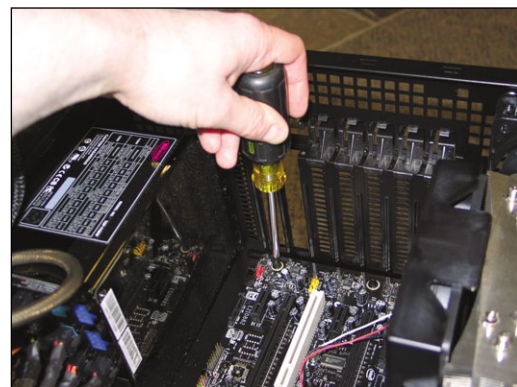
Next, plug in the PSU and turn on the computer. It won't boot from a bare hard drive, so put your OS (operating system) installation disc into the optical drive and press the case's reset button.

The Software Side

Finally, after you install a fresh copy of your OS, install the drivers for the motherboard chipset and network adapter. It's best to use another PC to download the latest ones from the board manufacturer, but you'll likely be fine with the ones on the board's driver CD. Double-click the download's EXE file or use the Setup program on the CD.

Next, install your video card's driver and an antivirus program. Connect to the Internet and run Windows Update several times to fully patch your OS. Afterward, install the rest of the motherboard's drivers and your applications.

Choose wisely, and install carefully, and your motherboard will provide solid ground for your new PC. ■



Motherboards are usually held in place by nine or 10 screws. Take care not to gouge the board with your screwdriver.

against the ports' housings, so if you need to bend one out of the way a little, don't go overboard.

Once the ports are all accessible from the back of the computer through the I/O shield without any

BY MARTY SEMS

FAST FIXES

Microsoft Office Outlook Junk Email Filter Update

Problem: The Junk Email Filter in Microsoft Office needs to be updated with current junk email definitions.

Solution: To update the Junk Email definitions for your specific version of Office, go to www.microsoft.com/download, type **junk email filter** in the Search field and click Go. Sort the results by date by clicking the heading Release Date once so that the most recent dates are at the top. Find your version of Office Outlook—either 2007 or 2003—and click the update link. On this page, click the Download button, found in the blue box. Save the file to your hard drive. While waiting for the download to complete, quit any programs that are running. Locate the .EXE file, double-click it, and follow the on-screen installation instructions. Restart your computer when finished.

www.microsoft.com

Security Update For Windows XP Service Pack 3

Problem: Microsoft has identified a security issue in various Windows Media Components that could lead to a remote attacker gaining control of your system.

Solution: To install this update and protect your computer against a possible malicious attack, go to www.microsoft.com/download and type **KB952069** in the Search field. Click Go and then from the results list, click the Security Update for Windows XP Service Pack 3 (KB952069) link. On the following page, click the Download button, found in the blue box. Save the file to your hard drive and wait for the download to complete. Locate the file, double-click it to begin the installation, and then follow the on-screen directions to install the file. Restart your computer when it is complete.

www.microsoft.com

Skype Update

Problem: Skype 3.8 is known to crash sometimes during shutdown. It also lacks support for fullscreen video calling.

Solution: Fix the shutdown bug and gain new features such as full-screen video calling and improved sound quality by downloading and installing version 4.0 of Skype. Go to www.skype.com/download, and the site should automatically detect your operating system and send you to the right page. If you do not see a green Download Now button in a light blue box labeled Skype 4.0 For Windows, then click the Windows link in the right-hand column. Once you are on the correct page, click Download Now. This will download a file called SkypeSetup.exe—find and run this program. You may need to select Run again, if you get a message confirming you want to run this software. From there, follow the Setup Wizard instructions on-screen. Open Skype anytime after the installation finishes to use the new version.

www.skype.com

Security Update For Windows Vista

Problem: Vulnerabilities have been found regarding Microsoft's Server Message Block Protocol, which, if exploited, could give an attacker unauthorized access to your computer.

Solution: Microsoft has released an update that addresses this situation by validating the fields in the SMB packets. Grab this update by going to www.microsoft.com/download, typing **KB958687** in the Search field, and clicking Go. From the results list, click the Security Update For Windows Vista (KB958687) link. On the next page, click the Download button in the blue box. Save the file and wait for the download to complete. Once complete, find and double-click the file to begin the installation. Follow the

on-screen directions and restart your computer when the install is complete.

www.microsoft.com

Xfire In-game Chat Update

Problem: The popular in-game communication app Xfire has an issue with parsing game server info.

Solution: The new build of Xfire (1.103) addresses the parsing bug and adds an in-game Web browser. To update, download the latest version by going to www.xfire.com and clicking the yellow Download Xfire button on the home page. The next page will automatically download the file. Locate the downloaded file, double-click it, and follow the install instructions.

www.xfire.com

FIX OF THE MONTH

QuickTime 7.6

Problem: Apple has identified some quality and security issues with QuickTime.

Solution: Everyone looking for improvements in QuickTime's audio (improved MPEG 4 AAC encoding fidelity), video (improved single-pass H.264 quality), and security (better handling of malicious media files) should grab this update. Go to support.apple.com/downloads and type **QuickTime 7.6 Windows** in the Search Downloads bar. Click the link for QuickTime 7.6 For Windows and click Download. Next, choose whether you want to also download a version of iTunes and whether you want to sign up for newsletters. No email is necessary if you don't want to sign up for newsletters. Finally, click the Free Download Now button. Save and run QuickTimeInstaller.exe.

www.apple.com

Q & A

Need help with your hardware or software? Looking for simple explanations on technical subjects? Send us your questions!

Get straight answers to your technical questions from *Smart Computing*. Send your questions, along with a phone and/or fax number, so we can call you if necessary, to: *Smart Computing* Q&A, P.O. Box 85380, Lincoln, NE 68501, or email us at q&a@smartcomputing.com. Please include all version numbers for the software about which you're inquiring, operating system information, and any relevant information about your system. (Volume prohibits individual replies.)



Online

Q I frequently hear advertisements for companies that claim to protect the data on my computer and back it up. Should I be concerned and use a company like this?

A Many companies offer online backup services for home computers. Online backup services can be a valuable way of protecting your data, but they aren't for everyone.

Using an online backup service is easy. First, you sign up for the service and then download a small application that takes care of backing up your data. When you've configured the backup software, it sends your data to the backup service's storage servers for safekeeping. Some backup applications will watch your files and only back up files that have changed. This can help minimize the amount of time and bandwidth the backup consumes.

Many companies offer this type of service for varying prices. One such company, Mozy (www.mozy.com), offers 2GB of backup space

free. Most services offer a free trial period so you can see how they work before committing to a long-term relationship.

Online backup can be a powerful way of protecting your data, but before you leap, be aware of some caveats. First, you'll need a fast Internet connection. For example, backing up 2GB of data would take over two hours on a 3Mbps (megabits per second) DSL (Digital Subscriber Line) connection. If you're on a dial-up connection, online backups would be an unworkable proposition.

Second, you'll want to make sure that you're dealing with a reputable service such as Mozy. You're entrusting the service with your data, and they should encrypt your data while transferring it and storing it. And finally, online backups are best-suited for small amounts of data that can be easily transmitted in a short period of time. Compared to DVD burners that can make backups to disc in minutes, online backups are best viewed as an adjunct to a more traditional backup plan using DVDs, tapes, or removable hard drives. **I**



Multimedia

Q I try to watch videos from Hulu (www.hulu.com) and Netflix (www.netflix.com) on my PC, but they either stutter frequently or just look grainy. Is there any hope for me?

A With the widespread availability of high-speed Internet connections, online video is quickly becoming a popular way of watching movies and TV shows. From movie offerings from Netflix and Amazon.com to online TV streaming from Hulu and major networks, it's easy to get your fill of shows.

Enjoying the best entertainment experience on your PC depends on several factors. Foremost of these factors is a fast Internet

connection. Most of the video Web sites stream portions of the video to your PC while the video plays. Normally the video won't start playing until a buffer on your computer has enough video to provide a seamless viewing session. The faster your Internet connection, the faster the buffer is filled.

Connection speed also affects the quality of the video. For example, Netflix makes a rough determination of your connection speed and then streams a matching video. The faster the connection, the better video you receive. This is so that users on slow connections don't have to wait long periods of time for a video stream to begin playing.

In addition to connection speed, the performance of your PC can have a large impact on the video experience. Video streams require a video player; Netflix uses Microsoft's SilverLight player while Hulu uses Adobe's Flash. If your computer is a bit long in the tooth, it may not have the horsepower to decode the video stream without a few stutters or dropped frames.

And finally, it's important to manage your own expectations. Most of the video streamed isn't in high definition, but instead a lower picture quality. Combined with computer monitors that are often more powerful than HDTVs, these lower-quality

videos can appear grainier than you might expect. Most computer users sit far closer to their monitors than they would to a television, so picture quality flaws are more readily apparent.

The good news is that our computers are continually becoming more powerful and our Internet connections much faster. In the meantime, our recommendation would be to make sure that while you are watching a video on your computer, you do not use it for any other activity, if possible. Downloading a large file from the Internet while watching a streaming video is a recipe for disappointment. ■



Hardware

Q I have poor wireless connectivity inside my home even though I use a network extender. Recently, I upgraded to an 802.11n router, and I still can't seem to get a solid signal. My computer is one level higher in my home than the router and is less than 60 feet away from it. Environmentally, we have an antenna farm on a hill about half a mile away with TV, AM/FM, microwave, and cellular transmitters. Do you have any suggestions?

A Although Wi-Fi vendors would love to have you think that Wi-Fi is a perfect solution for everyone's home-networking needs, experiences like yours are proof that different networks are sometimes needed for different home environments.

Wi-Fi networks are prone to interference in several ways. First, there might be obstructions between your Wi-Fi access point and your computer. Physical obstructions can weaken or attenuate your Wi-Fi signal, resulting in either slower networking speeds or intermittent connections. If you can, try repositioning your access point. You might find that this will improve the connection strength of your network.

In addition to physical obstructions interfering with your connection, you might have interference from neighbors who are using Wi-Fi too. If they are using the same channel as your access point, they might

cause interference or degraded performance. Changing to a different channel might improve your connection, and your access point's manual should provide instructions on how to change its channel.

Also, most Wi-Fi uses the 2.4GHz radio spectrum. (802.11n routers use 2.4GHz or 5GHz.) These are unlicensed spectrums available for any manufacturer to use. Cordless phones, baby monitors, garage door openers, and numerous other common household devices may use this spectrum and could be the cause of the interference you've been experiencing.

Finally, we doubt the antenna farm near your house would be causing any issues with your network. These transmitters all use tightly regulated and licensed radio spectrums that shouldn't interfere with the Wi-Fi signal from your access point.

If all else fails, you might want to investigate using a technology known as powerline networking. Powerline networks use your home's already built-in electrical wiring to transmit data signals. It's not as portable as a wireless connection, but the speed is usually quite high, and it is not prone to interference like a Wi-Fi network.

Powerline kits are available from Linksys (www.linksys.com), Netgear (www.netgear.com), and other home networking vendors. A typical two-adapter kit can usually be purchased for under \$150. ■

Frequently Asked Questions

Answers to users' most common questions about the BIOS

In most cases, today's BIOSes can do an excellent job of identifying and self-configuring the PC hardware, and it's rare that you will need to access the setup utility.

FAQ What is the BIOS, and how is it different from other firmware? Where is it in the PC? Why is it important?

The BIOS (Basic Input/Output System) is a small amount of program code that is semi-permanently stored in a chip located on the PC's motherboard. The BIOS initializes the motherboard components when power is first applied or a reboot occurs. It also identifies other components that may be attached to the motherboard such as RAM, a video adapter, or hard drives. It then hands off the boot process to the OS (operating system).

The BIOS also provides a setup utility that lets you specify the hardware configurations and set operating parameters for the motherboard. The BIOS setup utility is normally accessible in the moments just after booting and before the OS handoff. You'll see a terse message such as "Press F2 For Setup" or some similar instruction, though the key(s) will vary depending on the BIOS maker. In most cases, today's BIOSes can do an excellent job of identifying and self-configuring the PC hardware, and it's rare that you will need to access the setup utility.

The BIOS also provides a suite of input/output subroutines that the OS uses to interact with the computer's hardware—the BIOS interfaces the OS to the myriad of motherboard and other PC hardware. Thus, the BIOS is written for each specific motherboard. However, it's important to note that today's powerful OSes rarely use the low-level BIOS calls, instead communicating with PC hardware directly through drivers.

So what is firmware? Motherboards are certainly not the only things that need instructions to initialize and operate. Other intelligent components, such as graphics adapters, USB devices, NICs (network interface cards), and most other hardware devices also require their own instruction sets on permanent chips. All of this code is collectively dubbed "firmware" because

it cannot be changed like software that is normally stored in RAM or on the hard drive. Even the BIOS chip is frequently wrapped up into that general term.

FAQ How do I perform a BIOS update?

BIOS updates are typically simple, but they are extremely important. In most cases, you would download the new binary code file and an installer and then execute the installer by double-clicking its icon in Windows. The installer may create a copy of the current BIOS, wipe the chip, copy the new code to the chip, and then reboot the system—it's typically a hands-off process that takes just a few minutes. Just remember to close any data files and applications before starting the BIOS update because the PC will normally reboot afterward.

The most critical aspect of the BIOS update is to select the correct update file for your specific system or motherboard. Remember that each BIOS is written for each specific motherboard make/model, so using the wrong BIOS code can easily leave your PC inoperable.

FAQ What happens if the PC quits, reboots, or has other problems during a BIOS (firmware) update?

Don't stop the BIOS update process once it starts. While BIOS updates are much faster and simpler today, the PC still needs a complete BIOS to start up and run. If the update doesn't complete successfully, the BIOS may be corrupted and cause your PC to malfunction (usually it won't even boot). Closing any open applications will help avoid potential trouble between the update routine and other programs, and running the PC from a UPS (uninterruptible power supply) guards against the possibility of power loss during the process. This serious caveat is why you shouldn't mess with a BIOS update unless it fixes a specific problem that you're actually experiencing. If the update process fails for any reason and the system is affected, the PC may need to be sent back to the manufacturer for service. ■

Are you having trouble finding a product or getting adequate service from a manufacturer? If so, we want to help solve your problem. Send us a description of the product you're seeking or the problem you're having with customer service. In billing disputes, include relevant information (such as account numbers or screen names for online services) and photocopies of checks. Include your phone number in case we need to contact you.

Letters may be edited for length and clarity; volume prohibits individual replies.



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Lenovo Reissues A Disappearing Rebate & People PC Stops Billing An Ex-Customer

If you can't help me, I'm going to have to give up. I've been trying for nearly a year to get my promised rebate from a Lenovo/PayPal promotion. On Dec. 30, 2007, I ordered a Lenovo T61 ThinkPad with a \$100 rebate if I paid using PayPal. On Jan. 4, 2008, I received the laptop. I was told that it would take about two weeks to get my \$100 rebate. Then the problems began. On Jan. 31, 2008, it appeared in PayPal as if the rebate was deposited in the correct account, but then it disappeared. One of the many people I spoke with at PayPal said the rebate had been returned to Lenovo. A contact at Lenovo reported being told by PayPal that someone at my account sent the money back to Lenovo. That is possible, as it was the first time I had ever used my husband's PayPal account. However, that still means that Lenovo was holding my \$100 rebate hostage. Thank you very much in advance.

Sharon
Fair Lawn, N.J.

We started to contact Lenovo and PayPal on Dec. 9, 2008, to try to figure out why Sharon's \$100 rebate had immediately disappeared from her husband's PayPal account and how she could get it back. Like Sharon, we were bounced from one person to another through an ever-changing roster of customer service personnel at both companies. Lenovo pointed out that the rebate had already been paid (which was true) and that it didn't appear that the money had come back. PayPal, on the other hand, asked Sharon to find her account transaction records, which she did on Dec. 17, 2008. Her PayPal records showed that the rebate was refunded to "Lenovo/PayPal" the same day it arrived, although there was no

indication of how this happened. After talks between Lenovo and PayPal, Lenovo decided to re-issue Sharon's rebate. On Jan. 15, Sharon wrote to say that her \$100 rebate had arrived via PayPal and that this time she would immediately transfer it to her bank account.

I signed off of People PC last March, but they keep billing me \$1.95 every month on my credit card. I have tried calling them, and they keep putting me on hold for so long that I finally give up. I have even written to them as per my credit card company's request, and I still get no results. I want it erased, as I do not know what it's for. Hope you can help me.

Joyce
Wamsutter, Wyo.

We initiated contact with People PC, an ISP (Internet service provider), on Jan. 13, on behalf of Joyce and her husband, Max. We asked the company to cease its billing of Joyce's and Max's credit card and to terminate their account. We also requested that People PC refund them the \$19.50 or so that was billed to their account since March 2008. However, a service representative indicated that People PC would only cancel a user account over the phone, like many companies. We asked Max and Joyce to call People PC at (866) 772-6277 between 9 a.m. and 9 p.m. EST during business days. Meanwhile, we continued to press the company to issue the couple a refund. On Jan. 27, Max emailed us to say that he had finally gotten through to People PC on the phone. The company agreed to resolve the issue by Feb. 9, and gave Max a confirmation number. ■

The Right Fit

My son and I just finished building our first PC. It's a heartwarming moment for any geek, especially when I think back to the first computer my dad and I worked on (an Atari 400, if you were wondering). Everything went off without a hitch and, as I pondered *that* rare occurrence, I was struck by how important it was for us to have a set idea of what we were trying to accomplish. So many tech support problems stem from systems that don't fit their owners' needs. Picking a computer that's just right for you is the first step to solving and avoiding tech support problems down the line.

Whether you're building your own, as we did, or shopping for an off-the-shelf system, being picky about hardware pays off in the long run. The classic mistake I see most often is overpaying for processing and graphics at the expense of memory and storage. If you intend the system for high-end gaming or graphics work, there's no debate. Get all the power you can afford. Our machine, on the other hand, is primarily for homework and Web surfing with only an occasional game or YouTube video. For my money (literally), futureproofing the RAM and hard drive was worth far more than the latest CPU or a screaming video card. So we went with the graphics adapter built into the motherboard and a midlevel Athlon 64 X2 processor (www.amd.com). That let us pile on 4GB of DDR2 SDRAM (double-data-rate 2 synchronous dynamic random-access memory) and a 320GB hard drive. When you're looking at complete systems in the store or online, you may not have quite so much flexibility. But the concept is the same. For normal home or small office use, maximize memory and drive capacity, moderating processing and graphics power if you're trying to stay within a budget. More memory and more storage will prevent more problems than pricier components likely to be obsolete by the time you start using them.

Peripherals are no less important. I long ago lost count of the different ways people have trouble with their speakers, scanners, printers, and mice. As with hardware, only buy what you really need. Unless you know exactly what you're going to use a given peripheral for, you don't really need it. We went with a simple 2.1-channel speaker set, as this machine will also provide music for the breakfast nook, back deck, and kitchen. We passed on a printer, saving space on

the counter and room in the budget by sharing the existing HP printer from the office computer upstairs. For the obvious necessities—keyboard and mouse—we bought mid-priced models that felt sturdy and comfortable without going nuts on crazy convoluted extra buttons or wheels. When you're shopping, don't be swayed by "included" peripherals—especially printers. The freebies and loss leaders thrown in by manufacturers and retailers sound great, and they may be harmless. But they're often of poor quality (leading to a never-ending cycle of support needs) and can end up costing more in the long run than purchasing a reliable model.

It's easy to overlook software when matching a system to your needs, but it's just as important as the hardware. The right OS (operating system) and version, the right security software, and the right utilities can all make or break your tech support future. We determined that Vista Home Premium was the right OS for us, even though I was tempted to stick with Windows XP, which I still have on my office computer and which I've found more stable than Vista. But I wanted Vista's improved Media Center capabilities and he wanted Sidebar Gadgets. The enhanced user and parental controls are important, too. We didn't need the extra power or the business features of Vista Ultimate, so we're keeping things simple (and affordable) with just the OS features we need. Similarly, we departed from my normal blend of antivirus, firewall, and antispyware utilities in favor of a single integrated security suite: Norton 360 (\$79.99; www.symantec.com). Security on this machine will involve more active oversight and configuration than I'm used to, plus more potential for user-invited threats. Hence a single administrative interface that I can efficiently manage is the top priority. We'll see how our grand plan for hassle-free computing works out over time, but we're looking good so far. ■

BY GREGORY ANDERSON

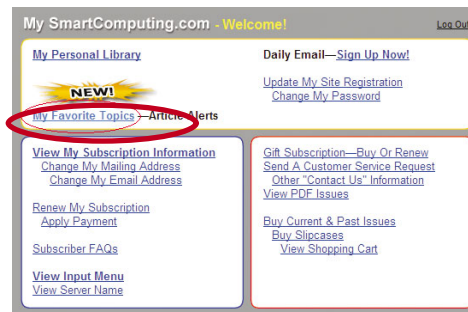
Gregory Anderson is a regular contributor to Smart Computing and several other technology publications. He keeps a sharp eye (with the help of thick glasses) on computing trends and enjoys working with geeks of all stripes—most of the time. Share your matchmaking chronicles at gregory-anderson@smartcomputing.com.



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Smart Computing's Tip Of The Day

Snap A Sharper Image

You know that using a tripod is a great way to reduce camera shake and capture the crisp, clear picture you want. But you can go one step further to eliminate blurry lines and fuzzy photos by using the self-timer on your camera along with your tripod. Most cameras have self-timer options of two to 10 seconds. Simply set the timer and remove your hands from the camera, eliminating the risk of shaky hands affecting the photo. Let the camera take the picture itself, and be amazed at how the stillness of your camera produces a perfectly clear shot.

Q&A Board

You can turn to your fellow *Smart Computing* readers for answers to puzzling problems and general computing curiosities. The Q&A Board at www.smartcomputing.com connects readers who have questions with those who have answers.

CableBox

\$29.95 | Bluelounge | www.bluelounge.com

The CableBox is a prime example of Bluelounge's talent for designing simple, stylish cable organizers. Deeper than the average shoebox (and about twice as long), the plastic CableBox hides your surge protector and any excess power cord length. Instead of a tangled mess, you have a small, clean box. Imagine not cringing when you look under your desk.

As simple as the CableBox is, it has some important features that make it better (and not just better-looking) than a shoebox. For one thing, its rubber feet keep it in place under your desk. For another, the lid locks into place so that you don't accidentally nudge it off with your feet. It's worth a look.

by Joshua Gulick



24/7 Xtreme Portable Charger

\$49.99 | Medis Technologies
www.medistechnologies.com

The Medis 24/7 Xtreme Portable Charger Fuel Cell Power Starter Kit provides an emergency power boost for just about any mobile device using fuel cell technology. Fuel cells use liquid to generate power without the need for wires or outlets. To use it, you just twist and remove the safety tape on the charger; squeeze the device; gently shake it to make sure all the liquid gets distributed evenly; and then connect your cell phone, MP3 player, or other mobile device. In a short time, your device will be fully charged and ready to use.



by Seth Colaner

BodyGuardz

\$14.95 to \$49.95 | NLU Products
www.bodyguardz.com

If you're looking for a good way to protect your new phone, iPod, or other device, but don't want the bulk of a case, check out BodyGuardz. These clear plastic film covers protect your device from the outside elements. When you buy BodyGuardz, you'll get two complete sets (MacBooks are an exception) that are cut specifically for your device. In addition, BodyGuardz offers lifetime replacements, though you likely won't need them: BodyGuardz is made from the same material that is used to protect the fronts of cars from stones and other abrasive elements, so they're made to withstand quite a bit. Installation wasn't very difficult, though I'd definitely recommend using plenty of application solution, as the instructions suggest.



by Jennifer Johnson

Canvas Messenger Bag

\$59.99 | Nuo Tech | www.nuo-tech.com

The Nuo Tech Canvas Messenger Bag combines straightforward functionality with simple colors and no-frills (and eco-friendly) materials. It features a classic flap-over top and adjustable shoulder strap. The interior laptop divider is large enough to fit a 15.4-inch notebook. (It can also accommodate some 17-inch notebooks.) Even though this bag keeps things simple, there are some noteworthy details including stylized stitching and pockets designed for mobile devices, writing utensils, and business cards.

Nuo Tech has also implemented an Eco-Friendly Initiative for encouraging the use of organic cotton, recycled plastic, and water-based dyes. So, if you've gone green (or you want to) the Canvas Messenger Bag is a smart choice.

by Joanna Safford



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